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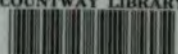
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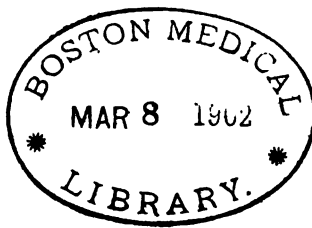
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ORIGINAL CONTRIBUTIONS.

**Should Gonorrhea be Considered as a Local
or Constitutional Affection?**

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Read before the Harvard Medical Society of New York City, May 25, 1901.

THE title of the paper in itself bespeaks a doubt as to whether this disease should be regarded as a local or constitutional affection, and not so many years ago such a question would have been answered almost immediately in favor of the first proposition, viz., that gonorrhea is a local affection; but within the past ten or fifteen years so much material has accumulated, tending to show that under certain circumstances gonorrhea may be attended with systemic infection, as to cause serious doubts touching its local character, and to afford strong reasons for believing that, sooner or later, it must be classed as a constitutional affection.

In order to arrange before our minds the differences which exist between local and constitutional affections, let us run over the general points which mark the difference between the two.

A local affection is understood to be one which is con-

fined to the points where the original infection has been received and if it extends beyond that particular point, it only spreads to adjacent tissues by contiguity; that is to say, it extends to parts more distant than the original seat of trouble only where they are covered by the same tissues as the original focus of disease. When, however, distant and non-contiguous portions of the body are infected the disease then loses its character as a local disease.

In constitutional infection, on the other hand, although the disease commences locally, or may appear to do so, the infecting medium (the virus) is in reality, quickly absorbed either by the arterial or lymphatic circulation, and conveyed to distant parts, there to set up disturbances which apparently have no relation to or bearing upon the original source of trouble, and these lesions may attack any part of the body.

Such, I understand, to be the difference, roughly speaking, between local and constitutional affections.

Now, although it has long been recognized that gonorrhea might attack the circumadjacent portion of the genito-urinary tract in both males and females, it was supposed to do so because these tissues and organs were contiguous, and closely and directly connected with each other; but it was also recognized that occasionally gonorrhea would attack joints at a distance from the original seat of trouble, and that the eye was also affected independently of direct conveyal of the urethral pus to the eye itself; and these instances, for want of a better name, were called metastatic invasion of these various organs.

For a long time it was held that gonorrheal rheumatism did not invade the heart, although it is stated by Sée that Ricord and Hunter both believed that gonorrheal rheumatism could be complicated by endocarditis, a view combatted by Trousseau and Grisolle. According to this same authority, the first case of gonorrheal endocarditis without rheumatism, was that of Marty, date not given, but probably somewhere between 1854 and 1858; and the first case of gonorrheal pericarditis without rheumatism was reported by Lehmann and Brandes in 1854. Notwithstanding these facts, however, it was sometime before endocarditis and pericarditis were admitted as resulting from gonorrhea. At the present day, however, there are so many facts bearing upon this point that I think we must concede under certain circumstances there is a direct connection between gonorrhea and cardiac affections. But it

was not until the discovery of the gonococcus by Neisser in 1879, and its successful cultivation by Bumm in 1887, that the scientific and careful study of the part that the coccus plays in the production, not only of the local symptoms of gonorrhea, but also the systemic and constitutional ones, came to be more fully appreciated and recognized.

Let us see what portions of the body are, or can be, affected as a sequence of gonorrhea. They may be briefly enumerated as follows:

The endocardium.

The kidney.

The brain.

The skin.

Abscesses, both of the subcutaneous and intramuscular tissues.

The joints.

The synovial tendons.

The pleura.

The eye.

The rectum.

The mouth.

The nose.

The pericardium.

The liver.

The spleen.

The veins.

The perichondrium.

The periosteum.

The peripheral nerves.

The spinal cord, and

The blood.

So far as regards most of these it is pretty generally admitted now, from experiments and investigations, that these portions of the body are invaded by the gonococcus directly, although in some instances it would appear as though the systemic poisoning was due to a mixed infection, viz., to the presence of staphylococci, as well as to the gonococci, so that I shall not detain you by enumerating all the investigations which have been made in each of these cases, but shall select only a few where it has been questioned if the gonococcus be really present, or whether the disease is due to a mixed infection. Of these I shall select the affections of the heart, of the

kidney, the brain, the skin, and the abscesses which occur in the subcutaneous and intramuscular tissues.

Finger, Gohn and Schlagenhauser, in 1895, recognized the existence of a malignant *endocarditis* as a complication of acute gonorrhea, and admitted that the gonococcus was the cause thereof, this being proved by the characteristic form of the bacteria, by their staining and discoloration by the Gram method, by their being found within the cells where the gonococcus usually is found, and by their capacity for cultivation. These points have been proved by other observers, but more particularly by Drs. Dabney and Harris, Thayer and Lazear, of the Johns Hopkins Hospital, as well as Dr. Hewes, of Boston; all of whom have found the gonococcus in the endocardium as well as the pericardium, in the blood taken from the heart after post-mortem, and in one instance, reported by Thayer and Lazear, there was a pure tricuspid lesion in which the gonococci were abundantly found, and which is claimed to be the first instance of such a kind reported.

The *kidney* has also been proved to be the seat of gonorrheal inflammation due to absorption or to conveyal of the gonococcus into this organ from the reports made by Berg, Young, and Bransford Lewis. In Berg's case, while there was acute pyelo-nephritis, gonococci did not seem to have been found in this organ, although they were found in vegetations on the aortic valves. In Bransford Lewis' case, however, a specimen of pus taken from the kidney of a patient who died of pyelo-nephritis showed numerous diplococci within the pus cells, which responded to all the tests which the gonococci usually give. They were also capable of cultivation upon urine-agar, and produced similar gonococci which also responded to the Gram test. It is worthy of note that in spite of what the microscope exhibited, the patient denied ever having had any venereal disease, either gonorrhea or syphilis. The examination of the patient's blood during his stay in the hospital showed the existence of the plasmodium malarix, this examination being made because, before his entrance into the hospital, he had daily chills and fevers, which were interpreted by him to be malaria. I mention this case of Lewis', not so much in confirmation of the fact that the kidney is capable of infection in the course of gonorrhea, as to exemplify a curious instance of the microscope discovering after death what was strenuously denied during life. In this same paper of Lewis'

he gives a case reported by Dr. Gerster, in the *New Yorker Medicinische Monatschrift* for April, 1897, in which a boy, 10 years of age, contracted gonorrhea, had all the evidences of septicemic poisoning, and finally died of pyelo-nephritis, and in which, post-mortem, the pus from the kidney showed staphylococci and gonococci in large numbers. At the time of his death this boy still had a marked urethral discharge.

Now, of course, the means of contagion in these instances may have been immediate, the inflammation extending from the urethral tract along the bladder to the ureters and thence to the kidney; this would seem the most probable and likely method and yet, notwithstanding the apparent ease with which this can be accomplished, gonorrheal pyelo-nephritis is, comparatively speaking, rare, much rarer than affections of the joints.

Whether the *brain* and *spinal cord* can be directly infected by the gonococcus is as yet an open question—the generally-received opinion being that these organs are not directly infected but are diseased either in consequence of a mixed infection, or from the action of a toxin which is produced by the gonococcus and is resident in the body of this bacterium, and that in this way the cases which have been reported of nervous lesions occurring in gonorrhea are to be accounted for. But there is one case in the literature of the subject which would appear to prove that the infection might be obtained directly from the gonococcus itself. It is reported by Fürbringer, in the *Deutsche Med. Wochenschrift*, 1896, and occurred in the person of a laborer, aged 25 years, whose mother was subject to epileptic fits, from which disease this young man also suffered, and whose father had died of phthisis. The man was admitted to the hospital complaining of wandering pains over his entire body, but more particularly of his head and abdomen. He was at work the day before his admission to the hospital and the night before he was restless and sleepless. On admission to the hospital the following was the result of the examination:

The patient was a strong, well-built, well-nourished man; he had some febrile symptoms, with a rapid pulse and respiration; the pupils were partially dilated, the left somewhat more so than the right, but both reacted to the action of light; the eyeballs were somewhat prominent; the optic papillæ were markedly congested on both sides. There was no discharge from the ear, and there was no appreciable injury to the head, although there was considerable stiffness of the neck; with

this was associated a marked restlessness, with a desire for constant motion, and occasionally he was subject to cramps; examination of the heart was negative; there were moist, medium and large râles over both lungs; the abdominal organs had nothing noteworthy about them. The genital organs showed that the patient had acute gonorrhea; from the orifice of the urethra an abundant, clear pus exuded, which the microscope showed to contain numerous gonococci of Neisser. The next day the patient became a little quieter, but more stupid, and the next day succeeding this, three days after his admission, a spinal puncture was made in the lumbar region which gave issue to about 25 cc. of a decidedly purulent, turbid fluid which flowed through the canula rather rapidly, drop by drop. Within the numerous pus cells were found in varying quantities, from a few to a great many, micro-organisms which very closely resembled gonococci. These micro-organisms were also found outside of the cells in pretty abundant quantity. The patient became comatose shortly after, and died the next morning. The result of the autopsy I shall pass over in silence, except where the brain and spinal cord are concerned. There appears to have been no examination made of the kidney, the lungs or the spleen for the presence of gonococci. As regards the spinal cord, however, the following note is made:

Upon removing the cord a somewhat turbid fluid was evacuated. The pia mater on both sides was infiltrated with yellowish pus. The calvaria was adherent to the dura mater; the pia mater was markedly congested, and at the base of the neighboring portions purulent infiltration was found. The gyri were flattened; the ventricle was moderately full; the brain substance was markedly edematous. In the pus from the brain and spinal cord organisms were found in the cells which closely resembled gonococci. Fürbringer appears to be somewhat in doubt as to whether these organisms which were found in the cerebral and lumbar fluid were really gonococci, or whether they were not rather the diplococci which Weichselbaum had found in the exudation from the meninges in many cases of epidemic spinal meningitis, and although the organisms in his (Fürbringer's) case were so similar to the gonococci of Neisser as to be indistinguishable from them, and although they responded to the usual tests there was still some slight difference between them.

Now, I am aware that at present it has been considered that the existence of gonorrheal meningitis and gonorrheal cerebritis have not been proven, but it seems to me that in this case of Fürbringer's we have the first direct proof of the possibility of these portions of the body being directly affected, and Fürbringer, it seems to me, is somewhat timid in assuming that the organisms which he found were not really gonococci. I am inclined to believe that they were; and the mere fact that none have as yet been found in those portions of the body does not prove that they can not be carried to the brain as well as to the other organs.

The *skin* is another of the tissues where gonococcal infection is open to question; but it is worthy of note that in many cases skin lesions have followed in the course of a gonorrheal attack where the disease was not confined simply to the local manifestations, but in which there were septicemic symptoms. Thayer and Lazear note the development of *petechiæ* in the course of gonorrheal septicemia with ulcerative endocarditis.

Balzer and Lacour report a case of *purpura* following in course of gonorrhea where the purpura were seated upon the lower limbs and was attended by cystitis, hematuria, and later on, by general purpura, gastro-enteritis with hematemesis, epistaxis, stomatorrhagia, arthralgia and myalgia. The bacteriological examination showed abundance of gonococci and of staphylococci albi which responded to the usual tests and were capable of cultivation. Some of the blood was taken for examination, and that also was capable of cultivation and showed in many instances an abundance of the staphylococci which responded to Gram's test. But these staphylococci differed somewhat from the gonococci, none of which latter were found pure in the cultures from the blood, although they were noted in the urethral secretions.

R. T. Morris has also reported a case of a man who contracted a gonorrhea in July, 1896. In October, 1895, he had arthritis, which quickly disappeared. His urethritis improved, but in September, 1896, his arthritis returned in his ankle, wrist, knee, hip, elbow and shoulder. The skin lesion came on in October, 1896, and began as an indurated, red, painful blotch, which ulcerated in the center. There were fifteen in all of these ulcerations. An examination of the pus revealed staphylococci but no gonococci. Allow me to say that the

existence of syphilis was denied. This case of Morris' is negative and only instanced in connection with the rest.

Abscesses of the cellular tissue seems to be due to direct contagion by conveyal of the gonococci to the tissues where the abscesses develop. Thus Almkvist narrates the case of a patient who was admitted to the hospital with an abundant, purulent, urethral secretion in which gonococci were numerous; on the inner side of the left tarsus there was a red, inflamed swelling which was very tender, and a short time after the invasion of the left foot a similar swelling appeared on the right foot over the tendons of the peroneal muscle. The left foot did not suppurate, but the right foot showed fluctuation which was treated by aspiration with a sterilized hypodermic syringe, and a great deal of pus was drawn off. A few days later another point of fluctuation was noted over the malleolus near the tuberosity of the fifth metatarsal bone. This also showed evidences of fluctuation and was aspirated in the same way. The pus from both these abscesses was examined and cultivated with the result that there were typical colonies of the gonococci found in the culture. Another case was reported by Hansen at the meeting of the Danish Dermatological Society in which a man was admitted to the hospital with gonorrhea complicated by arthritis of the right knee, of the left hip joint and of the left shoulder. The discharge from the urethra was abundant and purulent, and showed numerous gonococci. About a fortnight after his admission a large swelling occurred over the manubrium sterni which showed signs of fluctuation and which upon opening gave exit to a thick yellow pus, which, under the microscope, showed numerous intra- and extra-cellular gonococci, which under cultivation also developed diplococci to all appearances the same in character, staining, etc., as gonococci. Horwitz also reports a case in which a patient, admitted into the hospital with gonorrhea in the secretion of which were found gonococci, and in whom during the course of his stay in the hospital an abscess occurred in the dorsum of the metacarpal bone of the left middle finger. This swelling was aspirated with a sterilized needle and some pus evacuated, which under examination gave no positive evidence of gonorrhea. Four days later the abscess was opened by incision and it was curetted with a sharp spoon. This abscess secreted and on bacteriological examination few gonococci were found in the secretion. In this lat-

ter case I confess to a doubt whether the infection was not due to contagion after the opening of the abscess and that it should not be considered a genuine instance of metastatic gonorrheal infection, but the case is interesting as showing that the gonococcus, if this latter view is adopted, is capable of being inoculated upon a raw and purulent surface.

The *manner* in which infection occurs has been for some time a mooted point, and for a long while it was doubted whether the gonococcus was alone the cause of the systemic infection or whether the general symptoms were not due to a mixed infection; that is to say, whether other bacteria were not mingled with the gonococci and were the real cause of the septicemia. At present, however, there is very little doubt but that a pure infection by the gonococcus alone is proven. This is well shown in the cases reported by Thayer and Lazear, by Hewes and Dabney and Harris, besides many others, and although it is quite true that there are some instances in which the infection is a mixed one there is equally no doubt whatever but that the systemic infection may occur by the absorption by the gonococcus alone. As I have already said, another form of attack is by the so-called mixed infection, where cocci of various kinds are present, not only of gonococci, but staphylococci and the streptococci so that all three of these bacteria may very possibly be the cause of the systemic infection, particularly when we remember that the urethra may be irritated by the presence of other bacteria in the canal than those of Neisser, and I am of the opinion that as time goes on we shall very materially modify our views with regard to the pathognomonic significance of Neisser's gonococcus. I believe we shall recognize many varieties of gonorrhea, or, perhaps I should say urethritis, excluding entirely the word gonorrhea from our vocabulary, regarding them as bacteriological urethritis, traumatic urethritis, and simple urethritis; this, however, is a matter of personal opinion and more or less hypothetical.

A third method has been suggested in order to explain those cases of nervous diseases, fatal or otherwise, which occur in the course of gonorrhea, and which while believed to be dependent upon gonorrhea, yet could not be shown to be due to the presence of the gonococcus, viz., the toxin theory. This toxin was supposed to be produced in the body of the gonococcus, either by some metamorphosis which took place

in the body of the gonococcus itself, or else by the death and destruction of this bacterium, whereby it disappeared, but liberated a toxin similar to the ptomains of other bacteria and which was even more virulent and more fatal than the gonococcus. This latter is one which is the least susceptible of proof, indeed, may be said not to have been proved up to the present time. The other two it seems have been; we must consider that there is a systemic infection by the gonococcus itself and also by an admixture of the gonococcus with other varieties of cocci, either staphylo- or streptococci, all of which are capable of being and have been cultivated through several generations, and the only link wanting to prove that they were the genuine cause of infection was supplied by Lenharz, who, from a case of gonorrheal endocarditis where pure pus cultures were obtained from the thrombi on the aortic valves, inserted into the male urethra a softened thrombus, with the result that in four days' time an abundant urethral discharge appeared in the canal of the subject of the experiment, and this discharge was found to be loaded with gonococci; hence the gonococci that find their way into the heart of a subject suffering with gonorrhea are capable of producing the same disease when brought into proper relation with the human urethra.

The next question is, how do these gonococci get to distant parts of the body? Probably in two ways—by the arterial and the lymphatic circulation. As regards the first, Thayer and Lazear have found the gonococci in the blood of a patient who was suffering from ulcerative gonorrheal endocarditis, and in whom the attack was fatal, gonococci being also found on the valves of the heart; and Hewes, in two cases of gonorrheal rheumatism also found gonococci in the blood. Various other authors have obtained similar results, so that the fact that the blood acts as one of the means of conveyal of the gonococci to points far removed from the original source of the trouble seems fairly well established. As regards the lymphatic circulation, Hansteen reports the case of a man who had suppurating inguinal adenitis, co-incident with an attack of gonorrhea. The bubo was opened under antiseptic precautions, and the pus which came from it was found to be loaded with diplococci, which to all intents and purposes were those of Neisser. No other varieties of diplococci were found.

In a second case reported by him the infection seems

to have been a mixed one, for in the pus of the bubo which was opened, besides the gonococci there was a small number of streptococci.

In the third case, where the bubo opened spontaneously, it had existed for some time, resulting in several fistulous openings in the inguinal canal, and the pus which was squeezed out from these openings was found to contain a moderate number of gonococci.

In the first case it will be noted that the infecting cause was simply gonococci, and in order to prove that these were the source of the disease, the pus taken from the bubo was treated in the usual manner, and a portion of this culture was introduced into the urethra of a healthy man, producing in him a genuine gonorrhea.

In the second case, the infection seems to have been due to streptococci as well as to gonococci, but the gonococci predominated.

The third case was probably also one of pure gonococcal infection. Counter proof by inoculation was not tried in any but the first case.

The lateness of the hour admonishes me that my paper has reached the length prescribed by the by-laws of this Society, and I hasten to conclude, but before doing so, permit me to sum up in a few words what I have tried to show, and I hope succeeded in showing, in this paper, to-wit: of the existence of evidence that gonococci are found in portions of the body distant from the original seat of trouble which it could not have reached by contiguity; that in order to get there it must have been transported by some circulating medium, and when it arrives at these distant parts it is capable of, and does, produce serious and even fatal results. And I think I have also shown that besides the gonococci there appears to be another form of infection in which the gonococci are associated with other bacteria, which, however, seem to be similar in their characteristics.

The third instance, where the infection seems to be a species of ptomain poisoning, seems at present incapable of proof, and I have made no attempt to prove it.

I furthermore think I have shown that these cocci occur in the circulation of both the blood and lymphatic vessels, and that they have been found in the blood not only while circulating through the arteries, but even in the heart's blood

itself, and that they are also found in the glands at a distance from the original seat of trouble which they could not have reached through the medium of the lymphatics, and that when they reach these places they produce profound alterations and disturbances in the tissues, and may even cause fatal results.

Now, gentlemen, in what does this action of gonorrhea differ from that of syphilis? Indeed, in gonorrhea we have more direct proof that the bacterium associated with this disorder produces the disturbance, than we have in syphilis. The bacillus of Lustgarten is exceedingly difficult to find, indeed it has been doubted whether it is the real cause of the disease; whereas, with gonorrhea there is no question whatever; the only doubt is whether this coccus, which responds to all the tests which apply to the gonococcus, is really the gonorrheal bacterium, or something which resembles it so closely as to be practically the same thing. Perhaps the time has not yet come for us distinctly and formally to say that gonorrhea, or at any rate certain types of gonorrhea, are constitutional, but I think we may say that gonorrhea is capable of producing systemic disturbances, and can not be invariably regarded as a local disorder. Possibly in time we shall recognize two varieties of gonorrhea—the one local and the other constitutional—just as in bygone days syphilis was divided into two varieties—one, in which the disease was purely local, and to which we now apply the name of chancroid; and the other, a constitutional one, in which the entire system is invaded, and which may produce serious and lasting results.

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[16 WEST 32D STREET.]

The Early Recognition and Treatment of Pulmonary Tuberculosis.

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Read at the Meeting of the Grey and Bruce Medical Association, May, 1901.

IT is too well known what a scourge tuberculosis is, to render it necessary to cite facts in proof of it, nevertheless it is well to refresh our appreciation of the matter from time to time by recalling a few important proofs. According to the report of the Provincial Board of Health in 1899, there were 3,405 deaths from tuberculosis out of a total of 28,607—nearly one to eight. This is a trifle lower than the death rate usually attributed to tuberculosis, and may possibly be due to the more intelligent management of the disease. It is, however, not so great a reduction as has occurred in many parts of the United States, in Glasgow, and some other parts of the Old World. No doubt the education the public is now receiving will in the near future do much to lessen this death rate, chiefly by curtailing infection rather than curing the infected.

It is to be noted however that the death rate is not a true index of the prevalence of the disease. This was well shown by the experience of a German investigator who tested 2,500 apparently healthy persons with tuberculin, and in eighteen per cent of these there was a decided reaction. This result has been strikingly supported by those of Councilman, who found in a large series of autopsies on cases dying of diphthe-

ria, that seventeen per cent showed evidences of tuberculosis infection. These facts go to show that probably one in every five or six people are the subjects of tuberculosis, latent or active. In many of these fortunately the infection remains permanently quiescent. The old German proverb, that "everyone has a little tuberculosis," is not far astray.

The early recognition of the disease is of vital importance; it is of importance, in the first place, to the patient himself, because it is only in this stage that there is much ground for hope of a cure; and, in the second place, to his friends, because he has not yet become a source of infection, as ulceration and dissemination of bacilli in sputum, etc., have not begun. At this stage the patient's vital powers are still good, and they have to contend only with the bacillus of tuberculosis; at a later stage there is the secondary infection by streptococci, staphylococci, or pneumococci, and the condition becomes in reality of septic as well as tuberculous infection.

It has been the custom of some writers to speak of a pre-tuberculous stage of this disease. There can be no doubt that this is in reality the early stage of tuberculous infection, during which it is of the utmost importance to recognize the disease in order that proper management may be instituted. In order to arrive at an early diagnosis every symptom or clue must be canvassed, not only in itself but in its associations. A symptom may be of little value alone, but occurring in association with others it may form the ground for a positive conclusion.

Of the early symptoms the most constant are some loss of vigor, with slight disturbance of temperature. The recurrence of fever, even of a fraction of a degree above 99°F ., every afternoon without apparent cause, should excite the gravest suspicion. The elevation may not be constantly found, but its frequent occurrence should arouse apprehension. The temperature in tuberculous patients is peculiarly sensitive to disturbing influences; it is well, therefore, in doubtful cases, to take it after a walk or excitement of any kind. If, with the elevation of temperature, there are also such symptoms as debility, loss of appetite, slight loss of weight, and anemia, there is usually but one interpretation to be given. The occurrence of chlorosis, with elevation of temperature, is especially significant. The younger Klebs is said to get the reaction of tuberculosis in all such cases with the use of tuberculin. In

all cases of amenorrhea, therefore, the possibility of tuberculosis should not be overlooked.

The tendency to anemia is very great. There is usually undue pallor of the mucous membranes as well as of the skin. As a rule, examination of the blood does not show a reduction of red corpuscles or of hemoglobin in keeping with the appearance of the patient; the condition seems to be a general reduction in the volume of the blood rather than of the corpuscular elements or their pigment. In some cases, in fact, the serum seems to suffer more than the corpuscles, just as it does in many, if not most, cases of profound mal-nutrition or marasmus. In such, the blood drop is dark and contains over its five million red corpuscles per cmm. In these cases emaciation is always decided.

Although the temperature is usually elevated slightly, it is of the utmost importance to remember that instead of elevation it may be depressed and run a sub-normal course for many days, or even weeks, in succession. This is most frequently observed in those living an out-of-door life. This occurs probably more frequently in the more advanced cases, and possesses a significance equal with that of a febrile course. To obtain the fullest benefit from the temperature range it is necessary that it be taken regularly several times a day.

The importance of the temperature is well illustrated in a case of a farmer whom I examined several times within the last few days. Absolutely nothing could be found wrong on examination of his lungs, but he had lost flesh slightly, also color, and his temperature in the afternoons varied from 99.4°F. to 99.8°F. He has had some cough and expectoration for the last three weeks, but there are no bacilli to be found on repeated examinations of the sputum. In his case I have scarcely a doubt that there is tuberculosis infection and have advised that a test be made with tuberculin.

Rapidity of pulse is an early and characteristic symptom; it may be as suggestive as the disturbance of temperature. It is easily excited by both physical and mental causes. It is of much prognostic value, as a rapid weak pulse means danger. This lack of equilibrium is doubtless due to the tuberculous toxine acting as a circulatory depressant and vaso-dilator. There are many other causes that render the heart easily disturbed, but none more frequent than tuberculosis.

In some cases the first sign of the disease is hemoptysis.

In many of these cases it is quite impossible to find any physical sign of disease of the lungs, yet the occurrence of such hemorrhage without obvious cause is almost sufficient ground for a diagnosis of tuberculosis. We meet with cases of hemoptysis from time to time in whom no other symptoms of tuberculosis ever occur, and yet the cause in them is almost certainly tuberculous. It is worthy of remark that such attacks are rare in those leading an out-of-door life.

Occasional cases are met with in which early hoarseness is the first to attract attention. With this there is usually very slight cough, of which often the patient is not cognizant. In these cases it has been recommended to give iodide of potassium in moderate doses for a few days in order to increase expectoration, so that tubercle bacilli may, if the case is tuberculous, be demonstrated in the sputum. Its use may also enable us to discover fine crepitation at the seat of disease in the apex of the lung.

Pleural affections are in a good many cases the first signs of tuberculosis. They are nearly always secondary to an infection elsewhere, and may be excited by direct eruption of tubercle through the membrane from lung or glands, or by the toxine circulating in the blood. Local dry pleurisies are the most common, causing usually sharp lancinating pains in the chest. Pain in the chest, however, in the majority of cases of tuberculosis, as in other anemic conditions, is not inflammatory but rather neuralgic. Large pleural effusions are not infrequently met with as the first sign of tuberculosis, and may long resist treatment. In a lady in a western town whom I saw in November, 1899, the effusion was so rapid that aspiration was necessary every five or six days for many months. No focus of tuberculosis could be discovered, although the effusion was doubtless tuberculous. She improved in health for some time, but has again declined of late.

Among the earliest symptoms in a few cases, must be mentioned loss of appetite and derangement of digestion. In such cases it is wise to note the condition of nutrition and the state of temperature. Such derangement of digestion itself does not give rise to elevation of temperature unless it is due to a catarrhal inflammation of the digestive tract.

While in the great majority of cases the development of tuberculosis is characterized by some or all of these symptoms, it must not be overlooked that occasionally the disease is met

with in stout, robust men, who show no depreciation of health or strength, or loss of flesh, and the physical signs may be unmistakable and bacilli be found in the sputum.

In estimating the possibility of tuberculosis in any case, due accounts should be taken of the hereditary tendency and former conditions of life, including the probable exposure to contagion. From time immemorial great importance has been attached to the family history; hereditary tendency was given the first place in the causation of tuberculosis, but with our knowledge of the contagion of the disease, came also our doubt of the prime importance we were wont to attach to it. It now takes quite a subordinate place in the etiology of the disease. The disease is rarely inherited, and no matter how bad the family history of a child be, it is certain that it will never become affected with tuberculosis if its environment is healthy and its atmosphere free from the ubiquitous bacillus. It is equally true, however, that no matter how vigorous a constitution the child may inherit, the liability to contract the disease is great, if exposed to the contagion under favorable conditions for its development. We have all met with heart-rending instances of whole families, in which for generations there had been no case of tuberculosis, being wiped out by the return to the family fold of one who during an absence from it had acquired the disease. An instance of this kind came under my observation not long ago. A brother who had been absent for a year or two came home ill with pulmonary tuberculosis, from which he died within a year. A sister who nursed him became affected before his death. She in her turn was nursed by her mother, who acquired the disease before the daughter's death, and so the disease progressed until one after another the whole family of the mother, two sons and three daughters had died of tuberculosis, which was introduced into it by the infected brother. Therefore, in estimating the probability of tuberculosis in any patient, his life, with its exposures to contagion, his work, his dwelling, his associations and his habits should be well canvassed. The family history is chiefly of importance as it affords evidence of exposure to contagion.

Before referring to the physical signs to be sought for and interpreted, let me say a few words about the methods of examination. In my clinical teaching I fear I often weary you with the reiteration of the importance of inspection in the ex-

amination of patients. Our eyes are by far the most important organs through which to acquire information, and in physical examination I venture to say they are the least systematically used. Excellent physicians often fail in diagnosis because they do not use their eyes to advantage. In no class of cases is it more important that care should be taken in inspection than in pulmonary tuberculosis. All males, and with due exceptions females also, should be stripped to the waist and placed at ease so that a good light shall flood both sides equally. Then the formation of the chest can be observed, careful note being made of any irregularities, retractions, the expansion, the unison of movement of the two sides, the action of the intercostal spaces, the position of the cardiac impulse, and of Litten's diaphragm phenomenon.

Palpation and percussion do little more than confirm the information obtained by inspection, as in these early cases fremitus and resonance are yet unaffected.

In auscultation, careful study should first be made of the rhythm and character of the respiratory sound, and the length of expiration. Not rarely the first deviation from the normal discovered is a slight weakening and roughening of the respiratory sound with some prolongation of expiration. This change may be sufficient for the diagnosis, especially if associated with the constitutional symptoms already referred to. The absence of physical signs in these early cases is due to the fact that disease begins deep in the apex of the lung, and is therefore surrounded by a thick layer of normal lung tissue, through which abnormal sounds fail to be conveyed.

Recently the X-rays have been used for purposes of diagnosis. Deposits in the apex of the lung are shown by the occurrence of a dark shadow, but the deposit requires to be fairly extensive to make the shadow sufficiently deep to be of practical value. The movements of the diaphragm can be observed by the rays, and when one lung becomes materially diseased the expansion of it is restricted, so that the diaphragm does not descend to as low a level on the affected side as on the healthy. This, however, also requires considerable advance in the disease, when the condition can usually be distinguished by physical examination.

Finally I would emphasize the importance of repeated examinations of sputum. Not rarely patients say they expectorate nothing, and yet if a receptacle be provided they manage

to secure a pretty fair quantity within the next twenty-four hours. As a rule in the early cases no bacilli can be found, because ulceration in the bronchi has not yet taken place. Any sputum that can be obtained, however, should be examined with the utmost care.

There still remains a resort to tuberculin to confirm or disprove our suspicions. As to the wisdom of using the tuberculin test for the diagnosis of tuberculosis, there is some difference of opinion among competent observers. Led by Virchow, a strong protest was entered a few years ago against its use, on the ground that it might light up latent foci, and lead to a rapid dissemination of the infection. On the other hand, many careful observers who have had large experience assure us that with the small doses necessary for diagnostic purposes the fear is groundless. Dr. Trudeau, of Saranac Sanatorium, told me a few weeks ago that he had continued to use tuberculin since its introduction without having had any deleterious effect in any case, and that it had never failed to determine the existence of tuberculosis in doubtful cases where it occurred. He has found it invaluable in determining the existence of disease in cases in which otherwise a positive diagnosis could not be made. In the light of this experience one need not hesitate to use it to determine the existence of a disease whose early recognition is of such paramount importance. One or one and one-half milligrams is usually sufficient to begin with; if there is no reaction, the dose may be doubled until a dose of five, or at most ten, milligrams are given; the absence of a reaction then being deemed sufficient to exclude the existence of the infection. The patient should be observed for a day or two before to determine the natural course of temperature, then the dose given in the evening will, if the reaction occurs, show a disturbance of temperature in the morning. The injection may be repeated every day or second day until a conclusion is reached.

Of the treatment of tuberculosis I will only refer to the general principles. For this disease there is no known specific remedy—none that has any direct influence on its progress. We have, therefore, to depend chiefly on developing vigorous health; this is not only the most effective means of cure, but also the only protection against further infection. Nature, unaided, cures tuberculosis daily. The history of all races of men and animals bears testimony to the fact that an out-door

life is a positive barrier to the development of the disease. The North American Indian, so long as he lived on the open plains, sleeping in the open or in his tepees, was practically a stranger to the disease, but with his housing has come a terrible death-rate among them from tuberculosis. The disease is unknown among the animals that roam over the plains, and also among the cattle that are unhoused in winter. It is practically never met with among the cattle of the Scottish Highlands. These facts are eloquent in suggesting to us the proper management of people in the prevention of the disease, as well as in the cure of those who have contracted it.

By out-of-door life, we mean the constant living in fresh air, day and night, irrespective of weather. We are frequently asked by the affected or their friends if night air is not bad? I am in the habit of responding that indoor night air is usually very bad. No kind of weather should prevent a case of any kind of tuberculosis being in the fresh air, much less a suspected case. A patient who is suitably clothed can not take cold. This is a difficult lesson to teach people in general. There are few houses in the country to which fair arrangements as to shelter can not be made, in which one can sit, or even sleep if necessary, sufficiently protected from inclemency of weather.

These remarks apply to cases in all stages—it is of the early we are speaking to-day. Nothing should be allowed to interfere with their living in the open air. In many of them the mode of life or occupation may be changed so as to give the fresh air life that is needed. I have sent many young men in such conditions of health to the prairies to follow ranching, or other occupations they can obtain there, and the results have invariably been gratifying. One young man with well marked excavation in one lung, and of course some disease in the other, went out beyond Calgary seven years ago to a ranch; he has recovered vigorous health and has now a large ranch of his own. A young physician went out four years ago with tuberculous ulcer of the larynx, but without any symptom of disease of the lung. He started practice out there; has completely recovered, and is spending this summer taking a post-graduate course in Europe.

Many, however, especially females, can not take advantage of such favorable conditions, but must remain at home and earn their daily bread; but even in the worst of these cases,

in the country especially, much can be done to improve their condition by securing the freest possible fresh air life, day and night. In the cities the conditions are very different; we are constantly meeting with young women particularly, in the early stages of the disease, who, if they could be placed in favorable surroundings, would make rapid recovery, but for lack of such conditions usually die before the advent of the second winter. These are the cases that stand in such great need of treatment at sanitariums, where they can be kept in fresh air, and be carefully looked after.

For such symptoms as loss of appetite, malaise, rapid pulse, cough, and the night sweating that so often results from debility, nothing that we know of does so much to relieve as fresh air. The more pleasurable the surroundings in which such fresh air is enjoyed the greater the benefit. We all know how much greater a holiday with exhilarating accompaniments benefit us than a dull one. Many dyspeptics are able to eat and digest much more away from home than at home, even when the supplies at the latter are as good if not better than those obtained abroad. The mental attitude has very much to do with the results obtained.

Rest is imperative in all cases of tuberculosis in which the temperature is above normal. Exercise is of importance and should be judiciously taken, with due regard to its effect on the temperature and pulse. If these are materially increased by it, the exercise is beyond the powers of the patient. The diet should be as generous as can be digested, in febrile cases the heaviest meals being given in the early part of the day, as the temperature is usually normal then. In the way of treatment, the first place should be attached to whatever will improve the powers of digestion, and everything that tends to disturb this function scrupulously avoided.

[151 BLOOR STREET WEST.]

Missouri State Board of Health.—The Missouri State Board of Health has organized as follows: President, Dr. A. W. McAlester, of Columbia; Vice-President, Dr. B. G. Dysart, of Paris; Secretary, Dr. W. F. Morrow, of Kansas City. The other members of the Board are Dr. E. L. Standlee, of St. Louis; Dr. D. T. Powell, of Thayer; Dr. J. T. Thatcher, of Oregon, and Dr. C. P. Elkins, of Ozark.

The Teaching of Therapeutics.

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THE study of therapeutics as connected with the early periods of life does not, in its general scope and details differ from that of the later periods. It may, however, be said of therapeutics, as of anatomy and physiology, that its study has been conducted to a far greater extent and with much more precision of detail in the later and more developed periods of life than in the early years of infancy and childhood. It is therefore self-evident that in the future in our medical schools there should be made especial anatomical, physiological and therapeutical investigations of the various early periods of life, so that this knowledge should be brought abreast of what is already known of these subjects in adults. There is no doubt, at least in the minds of those who study clinically the periods of infancy and childhood, that such investigation and study are important and much needed, and that they have their own place in the treatment of infantile diseases.

There are certain fundamental and primary facts in regard to therapeutics which have received their proper recognition in our practical preparatory clinical work, and just as it is of manifest importance first to study the anatomy, physiology and pathology of the different periods of life before we can intelligently attempt the diagnosis and treatment of diseased conditions at the bedside, so should the primary known truths of therapeutics be taught with the greatest care in the lecture room and laboratory before attempting to apply these principles to human beings.

The time for this preliminary instruction in therapeutics should be after the teaching of anatomy, physiology and pathology, and just before the advanced therapeutic instruction which comes later, in connection with the clinical teaching at the bedside.

The teaching of clinical therapeutics involves and includes largely an advanced and intimate knowledge of the different

phases of the individual in his diseased conditions, these conditions varying both as to individuality and as to the period of development. As this knowledge can only be acquired by long and continuous study and experience at the bedside, it is manifest that he who has time to devote himself to laboratory investigation and teaching is not in a position to teach practically advanced clinical therapeutics, and that the clinical teacher should therefore be educated to teach therapeutics by keeping abreast of the times, just as he does in anatomy and physiology, also that he who works practically at the bedside can not have time to work in the laboratories.

The two subjects, laboratory and clinical therapeutics, should supplement each other, and each have its proper place in a medical curriculum, the former coming first and being preparatory to the broader teaching of the latter. When our young men in the medical schools are taught their laboratory therapeutics as they should be taught, by competent teachers, they in their turn, as they become teachers, will have the proper laboratory knowledge to broaden and render more exact their clinical experience and instruction.

There should then be systematic therapeutic teaching in the laboratory, and by lectures, preparatory to sectional teaching at the bedside, and this teaching should be done first by the therapeutic laboratory expert, and second by the experienced practitioner. Thus only can justice be done, and the best results be obtained from the science of therapeutics, and thus only can we teach our students to become advanced scientific and practical therapeutists, and not merely routine pharmacologists.

Among the faults of our present system of teaching therapeutics, as seen at Harvard, are, in the first place, that too little attention and time are given to the elementary principles of therapeutics in comparison with that given to the other primary branches of medicine and surgery; second, as a result of this the scanty knowledge of therapeutics received in the school makes the young practitioner a ready believer in and dupe to the wholesale drug manufacturer, who states in his advertising pamphlets exactly what drugs are indicated to be used in the various diseases without having a real knowledge of the subject beyond a commercial one. The wholesale druggist is all the more dangerous in his influence because he is so respectable, and because there is no doubt that he is do-

ing much good and rendering much aid to the practitioner in supplying the different drugs in a pleasant and practical form. He knows more than the practitioner does about the preparation of the drugs, but does not know so much as the practitioner ought to know about their physiological action. A striking parallel to the position of the wholesale druggist is given in the owners of the proprietary infant foods, who are gradually but surely being forced back into their proper place by the students of infant feeding.

A third fault which I have noticed in the teaching of therapeutics is that the teacher in the laboratory attempts to give the clinical side of the subject, which he is unfit to do from his lack, not of original experience perhaps, but of continuous present experience. On the other hand, the clinical teacher at the bedside is too apt, after carefully making an elaborate diagnosis, not only to sum up the treatment entirely too quickly and without special detail, but also to state what drug is indicated without allowing the student to judge of the effects of treatment.

Far too much prominence is given in the teaching of therapeutics to drugs, and not sufficient to the many other therapeutic factors which make up the entire treatment, such as climate, baths, massage, electricity, and last, but most important of all, feeding. The latter, feeding, is of course of especial importance in infancy, so we may say that the therapeutics of infancy is essentially dietetic and should be taught by the bedside in conjunction with the use of milk laboratories.

Finally a fourth, but marked fault, is the indiscriminate treatment of young children with drugs, a fault which seemingly emanates from teachers who have too little practical experience, both in the laboratory and at the bedside. As a rule, the doses recommended are unnecessarily large, and are not adapted to the age, stage of development and special idiosyncrasy of the individual.

Too little instruction, moreover, is given to the student in the simple and common sense details connected with the administration of drugs.

[197 COMMONWEALTH AVENUE.]

Psychoneurosis.

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Read before the Tennessee Medical Society, April 10, 1901.

IMMEDIATE or independent thought is possible only in the infantile mind. The life of the infant is, at first, purely vegetative. His acts are reflex. He does not notice anything. His first cognizance is of self. Recognition of existence.

The consciousness of existence leads to mediate or correlative thoughts, first reflex, then automatic and finally provoking a rudimentary deductive reason. After the consciousness of being, all thoughts are governed by experience and environment.

Environment becomes the chief factor in his mental and physical development. The imitative element in him takes possession of him and he becomes a victim of circumstances.

Every act and every thought is prompted by the conditions under which he finds himself. Of far greater importance than heredity is environment, and may it not be that the greater part of what we call heredity is environment? Remove the parental influence and change the environment and you eliminate from the developed human, almost entirely, the so-called hereditary predisposition. This applies to the moral, mental, physical and pathological development.

Imitation is called out more fully by the example of a parent than anyone else, and a child develops the peculiarities of his parents to a greater degree by virtue of this influence than by birthright.

It is in this field we find much to consider in the study of the neuropathic heredity. With all that has been observed upon the relation between mind and body, we do not yet fully appreciate its importance, but the rapid advance in the knowledge of this relation as a factor in disease, is eliminating from medical minds many false conceptions.

A marked revolution in the conceptions of the etiology of nervous diseases is thrusting itself upon us.

The line which separates organic from functional disease is being rapidly shifted to its proper place. In no other division of medicine are these shiftings so radical and so rapid as in diseases of the nervous system. In this class of affections, more than any other, we have to consider the psychical phenomena as a causative element or a complicating condition. The rôle of the psychic mechanism as an agent in augmenting or dissipating disease has not been fully settled.

Notwithstanding the rapid advancement in psychological science, there remains many perplexing questions concerning the changes of function and structure in the maintenance of the peculiar principle we call life. The sum total of the difference between the two conditions designated as living or dead, is an intangible something which is in close relation to, if not the chief dominating factor in the thought realm.

There is but one function of a human being which can not be arrested, momentarily, while living, and that is the function of the thought-producing mechanism. It persists in a co-ordinate or inco-ordinate action until everything else has been silenced.

Perverted thought, perverted function and perverted action go hand in hand. One may precede the other, but does not, usually, long exist alone. The mental and dispositional development of a man bears a closer relation to his physical condition than, perhaps any of us realize.

Pathophobia is rather the offspring of example than of blood. The power of imitation is the chief factor in the production of psychoneuroses. We are all more or less familiar with the various morbid states which attend the prolonged entertainment of morbid ideas. The mind that is absorbed in evil forboding of financial or physical disaster or disturbance soon manifests impaired psychic function. The mind that dwells on unpleasant environments, grief, anxiety, disappointment and other like conditions becomes unhealthy. Under such psychic conditions, alteration in the physiological function of various organs may occur in proportion to the intensity and duration of the psychic disturbance.

Among the early disturbances noted under prolonged psychic depression or excitement are arrest or diminution of the salivary secretions, marked anemia of the skin from vaso-

motor disturbance, diminished elimination of the skin, increase in kidney compensation, anorexia, digestive disturbances, insomnia, restlessness and nervous irritability.

A frequently observed objective symptom attending prolonged psychic disturbance is the aura or peculiar odor emanating from the person. This is particularly noticeable in insane subjects, but also in a proportionate degree in those who are in a state of perverted psychic function, within the limit of so-called sanity. Prolonged disorder of these functions from morbid states of the psychic mechanism governing them will cause tissue change in the organ thus subjected, and a clinical entity or even pathological processes may supervene.

Neurathenia, hysteria, epilepsy, paralysis agitans and other like conditions may in this way have their origin in pathological thoughts. The list of diseases shown to be dependent, primarily, on psychic disturbance, is increasing with increased knowledge of this psycho-physical relation. "It is not the mind which makes the man, nor is it the body; it is the mind and body together." As a psychoneurosis, neurasthenia deserves the careful attention of the general practitioner as much as any of its class and serves, here, to illustrate some of the more salient points under this caption. There is no more common and serious nerve affection and yet more generally misunderstood by the medical profession, than this fatigue neurosis. There exists a surprisingly gross indifference to its real nature. In the minds of many it has been associated with malingering and hypochondriasis. Its distribution is so extremely generalized that every organ in the body may be involved. The brain, cord, peripheral nerves and visceral organs or any one of these may predominate in the rôle of symptoms. This wide range of manifestation is responsible for much confusion and many vague notions which exist concerning the true nature and character of this disease. Its existence as a clinical entity is still disputed by some who are disposed to class it as a symptomatic disease.

There is little controversy, however, among those most competent to speak, and the generally accepted opinion is that neurasthenia is essentially a fatigue neurosis characterized by an increased morbid reaction of the ganglionic nerve centers, to all kinds of impressions, both mental and physical, whether slight or profound, producing an excessive nervous weakness and irritability, which constitutes its chief cardinal symptoms.

It has further been demonstrated by recent observers that notwithstanding the wide range of symptoms and protean manifestations, there are always present certain essential features which constitute a well defined and distinct clinical individuality. It is accepted that in the chief symptoms of neurasthenia there exists unmistakable evidence of weakness and irritability of the nerve centers which in themselves are expressive of fatigue. Weakness and irritability of the nervous mechanisms that preside over the various bodily organs are, therefore, the chief clinical phenomena belonging to any and all varieties of neurasthenia.

I do not think it is due so much to exhaustion of nerve energy as to loss of the transmitting power. We have not yet clearly defined this power of transmitting energy. It is true that, commonly speaking, the presence or absence of physical strength is dependent upon the psychic state, and in many instances, so-called physical exhaustion is only apparent. That this is due to loss of authority in the mechanism which transmits energy may be illustrated by the following example, which is familiar to all of us:

A pale, emaciated woman who has been confined to her bed for years, and who can not summon the strength to turn herself in the bed—her voice is thin and weak, her pulse is feeble, and, indeed, bearing every indication of physical exhaustion. Suddenly her mental equilibrium is lost and as suddenly she is transformed into a being of surprising strength and endurance, even taxing the strength of a strong man, or perhaps, men, to restrain her conduct. Her pulse is full and bounding, her voice is loud and strong and she manifests unmistakable evidence of physical strength and endurance. What is the principle underlying this transformation? Here we have two extreme conditions clearly dependent upon the psychic state. In the first instance a condition of lethargy or apathy seems to submerge the normal activity of the psychic impulse by which these vital actions in the body are governed.

This loss does not occur in the nerve nor in the potential energy residing in the economy, nor in the generating mechanism, but in the brain center governing the liberation and impetus or impulse to the latent potential already existing therein. This transmitting center is paralyzed.

In the second instance the inhibitory center is paralyzed

and the mechanism which transmits the impulse to the liberation of the potential, runs riot over the physical and mental organs and inco-ordination of thought and action results. Insanity is not necessary to this transformation, for changes almost as radical are produced by the so-called "healers" as well as by the more scientific psychotherapy. This function can not be fully understood except through a degree of familiarity with the intricate relations between soul and body.

Could we penetrate into the thought realm and successfully elucidate the psychic function in its relation to the physiological function, and understand the molecular changes produced in the gray matter of the brain in the process of thought; could we demonstrate the source of thought and trace its influence through all its intricate paths in the tangible man; we might better understand the pathology of thought.

This much is clear to my mind, however, that the so-called psychoneuroses are due to a disorder of the mechanism which dispatches energy and is designated as thought pathology.

Granting that structural changes occur in various tissues in many of these cases, I shall assume that they are adventitious. A careful study of the history, and symptoms, retrospectively, will arrive at unwholesome thought food as the primary cause in many cases. I have demonstrated many times—to my own satisfaction at least—that an organ or tissue subjected to continuous bombardment from the thought-producing mechanism having jurisdiction over it, may sooner or later manifest injury or disintegration in proportion to the intensity and duration of the shower of pathological thoughts to which it is subjected.

In classifying neurasthenia as a distinct clinical entity, I do not contemplate denying its existence as a sequel or complication of other diseases, but shall maintain that, under whatever condition found, it becomes a separate and distinct factor in symptomatology and treatment.

The fact that we have this condition existing by itself in otherwise healthy individuals, is quite sufficient evidence to give it nosological importance. Because of its tendency to associate and complicate other diseases, and to array itself into so many and divers forms, neurasthenia has to be considered in its relation to the diseases with which it is found, whether as a causative factor, a complication or a sequel. It

is because of these protean manifestations that confusion and disagreements have arisen in its diagnosis and treatment.

If we consider neurasthenia as a psychical invasion of an organism otherwise weakened, or as a culminating evidence of perverted cerebration, or a manifestation of lost equilibrium of mind and body, on account of which the nerve centers become disorganized, run riot over their functions, and from which riot the brain center is unable to recall them; in any event the chief element for our consideration is to locate and define the lost function and endeavor to restore the normal relation.

Hodge has shown that this morbid weakness and irritability is due to changes in the nerve cell itself. That such changes may be demonstrated is quite probable, but that they are the primary lesion is a more difficult question to demonstrate. It is easier to show how perverted nerve centers could cause deterioration of nerve structure than to demonstrate how the reverse may be true.

According to Mosso, this waste of nerve substance alters the constitution of the blood, producing a true toxemia which inhibits the physiological action of the nervous elements. It would first be necessary for Mosso to show that these blood changes are not from the same cause as the nerve changes, and that both are not from psychic disturbance.

The clinical history of many cases begins with bereavement, grief, sorrow, disappointment and prolonged anxiety over business or other responsibility. If the seat of authority in the control of the various functions of the body is in the brain, if the functioning being is under conscious or unconscious volition—an hypothesis which I shall here assume to be true—then in all disorganized or diseased functions we have to consider the brain as a factor of no little importance.

If this hypothesis be not true, functioning is but an automatic process and would maintain its normal state regardless of the condition of subjective or objective cerebration. This, we all concede, can not pertain. Our observations of the effects of consciousness, sleep, anxiety, fear, grief, anger, joy, hope, mania and other like psychical phenomena upon the physical changes of function, would lead to the conviction that functions are in abeyance to volition and receive their impressions from the great central mechanism which produces those peculiar, intangible mysteries we call thoughts. It is in

this mechanism we must search for the primary disturbance in the conditions designated as psychoneuroses.

The medical man of to-day is disposed to think for himself. The views of the past are not accepted simply because they have the approval of time. Many established opinions have been proven fallacious. A spirit of reinvestigation has seized the medical mind, and these investigations are producing surprising results.

A study of the vasomotor function of the skin—so accessible to the observer—under a great variety of mental states, leads to the conviction that similar changes may be produced in more remote and inaccessible tissues as the result of vasomotor innervation or enervation.

If such conditions as anidrosis, hyperidrosis, urticaria, hay fever and other functional vasomotor neuroses may be produced by emotional shock; is it not reasonable to suppose that like changes may occur in other organs from the same cause?

The etiological relation of many morbid states to functional disturbances of circulation is readily recognized. The recognition of the etiological relation of these disturbances of circulation to psychic impressions is also recognized. The deduction is that changes in the vascular condition of a part, under prolonged disturbance of innervation may produce structural changes. Some one has said "The hot blush on the cheek of modesty, the ashen palor on the face of fear, beads of perspiration upon the brow of responsibility, and the parched breath on the lip of embarrassment are but the passing shadows of the fitful play of vasomotor innervation."

[JACKSON BUILDING.]

A Census of Consumptives.—The Board of Health of the State of New York has ordered a census to be taken for the purpose of ascertaining the number of consumptives of that State, and such other information relative to their condition, environment, etc., as may thereby be obtained. New York State having undertaken to care for the consumptive poor within its confines, is gathering data that will reveal the magnitude of the task and probably point out the most practical manner in which it may be accomplished.

Subphrenic Abscess in Its Relation to Some Complications.

By J. MC. F. GASTON, JR., A M., M.D.,

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INDEPENDENT of the morbid changes in a known area, another syndrome of symptoms project themselves on the field, and we know we have a complication to deal with. In recent literature, appendicitis, Douglas' abscess, and neurasthenia are associated with suppuration in the abdominal cavity. Pelvic complications are very difficult to differentiate from appendicitis, and at a recent meeting of the Southern Surgical and Gynecological Association a large number of cases were reported. The discussion that resulted was especially interesting, in that the subject of appendicitis in the female was found to be a comparatively frequent complaint.

The relation between the occurrence of appendicitis and the presence of a neurasthenic tendency is also receiving attention.¹

Subphrenic abscess is closely associated with empyema and pleurisy, and a close examination of the patient is never complete without palpation of the organs of the abdominal cavity, as well as auscultation and percussion of the chest.

The perception of fluctuation is a most important aid in diagnosis. In hepatic abscess a great point is gained when a peculiar wave-like motion can be detected at the point of the finger held between the eighth and ninth ribs, and a tap or two is given with the fingers of the other hand at the umbilicus.

J. Marion Sims has called attention to this, and to the peculiar melancholia associated with incipient disease of the liver, resulting in abscess, in remarks made by him before the Medical Society of Virginia, October 25, 1879.

The diagnostic points depend, in a great measure, upon a very careful observation of each symptom as it arises, and a co-ordination of the symptoms pointing to hepatic abscess. All of these troubles are not so difficult to discover alone, but

¹Philadelphia Medical Journal, page 256.

when combined may be a source of considerable perplexity to the surgeon.

Two cases of some unusual perplexity have been operated upon by me. A short abstract of one will be given as it has been published in the *New York Medical Record*, under the title of "Subphrenic Abscess as a Complication of Appendicitis."

On June 3, 1900, I was asked by Dr. J. W. Carmichael to see W. E. F., aged 32, and examine him with reference to pain in region of appendix. Dr. W. Monroe Smith had seen him when he was first brought home, and administered a hypodermic of morphia, grain $\frac{1}{4}$, with atropine, grain $\frac{1}{150}$. At 7 A.M. his temperature was 100.2°F ., respirations 26, pulse 100. His general appearance gave evidence of a strong, robust man, prostrated by some serious complaint. The following prescription was given:

R Ungt. belladonnæ..... 3j
 Pulv. camphoræ..... 3j
 M. Sig.—Apply to abdomen, and cover with oiled silk.

He had already received a large dose of calomel, which was now followed by a tablespoonful of Epsom salts. His condition betokened a fulminating appendicitis and he was accordingly watched carefully; his temperature, pulse and respiration noted every half hour. All preparations for an operation were made. He received morphia sulphate, grain $\frac{1}{4}$, with atropia sulphate, grain $\frac{1}{150}$, hypodermically. His pulse was accelerated and pain became intense. Two tablespoonfuls of castor oil, with spirits of turpentine, one teaspoonful, were administered without results. The operation was performed in the afternoon, with the assistance of Drs. Smith, Carmichael and Gaston, Sr., A. C. E. mixture was administered. The parts were shaved, cleansed with soap and water, solution of carbolic acid and ether. An incision was made one and a half inches long over the tumor in the right iliac region, near the border of the rectus muscle. It was enlarged later to nearly three inches. The fibres of the transversalis and rectus muscles were separated by the fingers, and in the aponeurosis an aperture was made for a directory to guide the scissors in cutting. The peritoneum was opened in same way. A small amount of dark fluid was found. A large piece of omentum was ligated with cat-gut and removed. The appendix was tied with silk and cut with scissors. A portion of tissue near the appendix was excised, the stump treated with carbolic acid and replaced. The appendix was gangrenous, and contained one enterolith. The peritoneum was wiped with peroxide of hydrogen, irrigated with normal salt solution and hot water. The wound was then closed except at lower angle, to allow for gauze drain-

age. Patient was placed in bed, and received a hypodermic of strychnia nitrate, grain $\frac{1}{30}$. At 7:30 P.M., temperature 101°F , pulse 95, respirations 21. The ointment was continued. No morphine or water were allowed. Another hypodermic of strychnia nitrate, grain $\frac{1}{30}$, was given at 11:30 P.M., when his temperature was 99.8°F , pulse 105. A quantity of bile was vomited, the respirations were hurried, and at 10 P.M. his pulse was 95, and temperature 100.2°F . He received every hour a tablespoonful of the following :

R. Lime water..... $\mathfrak{Z}\text{ij}$
 Peppermint water..... $\mathfrak{Z}\text{j}$
 Camphor water..... $\mathfrak{Z}\text{ij}$

Diffuse peritonitis seems to have existed. The tongue was red and raw, while the respirations were irregular, accelerated and spasmodic. The pulse was the chief danger signal. Frequent dressings were used, and free drainage secured. Occasional small doses of calomel were given with resulting free discharges and relief. Sterilized gauze was used as a drain from the stump. Dioxide of hydrogen was continued four weeks. Sublimate gauze was substituted for sterile gauze on the third day. Dressings were made twice daily.

Iodoform gauze was packed into the wound on the tenth day. Upon remembering the fluctuation in the sub diaphragmatic region it was thought necessary to re-open the wound and drain. A complication of sub phrenic abscess was evident. The pyogenic membrane and pus finally escaped at a dressing. Milk was allowed as nourishment. An anodyne was given for the pain. Tonics, like elixir of iron, quinine and strychnia, tincture of cinchona comp. and strychnia nitrate tablets were given. Enemata of magnesia sulphate to obtain movement of bowels.

A large colon tube was used very satisfactorily.

The above complication in appendicitis is rare; Baldwin's cases make the forty-fourth and forty-fifth. Many cases were not diagnosticated until after death. Pathological examination shows an intra and extra-peritoneal variety.

In Baldwin's cases the first operation was performed on June 6, 1899, and not until July 20, 1899, did the abscess appear. After incision immediately below the twelfth rib, an enormous amount of pus from a large cavity with ragged edges escaped. The cavity extended up toward the diaphragm above the liver, and closed in six weeks.

The second case was operated upon on July 26, 1899, and again on August 28, 1899, for abscess. The cavity was about the size of an orange, somewhat ragged interior, which was

washed out with a counter opening for drainage. It was packed with gauze, and closed in two weeks.

In my case the symptoms were, evidently from the start, due to abscess because of fluctuation and rapid breathing. A channel, so to speak, was opened by the cutting away of the adherent omentum during operation for appendicitis. The discharge came from direction of the diaphragm, as evidenced by an increase when patient coughed or on deep inspiration. The outcome was peculiarly fortunate, not requiring another operation. As a probable cause of this abscess, the patient gives a history of injury of this region some months before.

The other case was one of hepatic abscess, which was aspirated and seemed to be relieved temporarily, when symptoms of empyema seemed to appear, and death followed.

These were men.

Another still was in the person of a lady, and has not been reported. Drs. J. C. Olmsted and J. Mc. Fadden Gaston, Sr., treated this case. There was an abscess in Douglas' cul de sac, complicated with abdominal organs. Free irrigation and antiseptic treatment resulted in a cure in this lady.

But before the abscess ruptured, grave doubt existed as to its origin: whether in the appendix, or whether the pus came from the tube.

In a patient which I attended some years ago, a similar abscess was discharged through the uterus after every symptom of gall-bladder obstruction, with jaundice and finally typhoid fever. She recovered entirely, and afterwards bore a healthy child, and never had a recurrence of either trouble.

It is well to consider the presence of retro-peritoneal abscesses, when an incision in the lumbar region has been suggested, as in these cases the dangers arising from peritonitis, and a migratory infection, are less than when the peritoneal cavity is invaded. It is evident that in the great diversity of conditions we should consider carefully, and I might say prayerfully, each individual case.

At times simply a tuberculous deposit is found on the appendix, and then we have very little more to do than to excise this diseased portion of the appendix. But in the great majority of cases an enterolith is encountered, and there is a process of gangrene which begins in the mucous membrane of the appendix, and spreads to the confines of the mesentery

and ends in perforation of the muscular and serous coats of the appendix.

As appendicitis is a disease associated with so many complications is it not wise to investigate thoroughly the nervous system, the lymphatic system, and the digestive and alimentary canal, before determining the means of relief to be adopted?

All pains in the region of the appendix are not due to appendicitis, and it is equally true that we may have a long continued abscess of the liver without any apparent enlargement of the liver or pain.

In the paper of Dr. J. Marion Sims, which has been already mentioned, he details a case in which the eminent neurologist, Dr. William A. Hammond, had formed a diagnosis of abscess of the liver from the symptoms of hyperemia of the brain, and had afterwards made a physical examination which was not entirely confirmatory, and which sufficed to cause an exploratory aspiration, with the evacuation of a quantity of pus (fifteen and a half ounces). The general health and mental condition of the patient at once improved, and he remained well after this, suffering only from previous paralysis.

"Dr. Hammond aspirated the liver twenty-six times in the last two years," said Dr. Sims in 1879. One of his patients was Dr. E. S. Gaillard, and nearly all the cases were in men who had undergone great mental exertion. In fifteen cases he evacuated abscesses, and effected cures. In eleven cases the operation was unsuccessful, but attended with no ill effects whatever. Dr. Hammond was in the habit of passing the aspirating needle through the intercostal space between the eighth and ninth ribs, at a point about an inch in advance of a line drawn from the axilla to the pelvis. Drs. W. E. B. Davis,² Joseph Price,³ W. Gill Wylie, and many others, as early as 1890, endorsed Taits' ideas of operative treatment for peritonitis, having first used saline cathartics in great quantities. In suppurative peritonitis particularly is an operation indicated with the evacuation of pus, wherever located. The earlier that the operation can be undertaken in all such cases, the better are the chances of recovery. I wish to give some of my own personal observations in this couple of rare cases.

²Read before the Medical Association of the State of Alabama, April 13, 1890.

³Medical News, August 9, 1890.

One symptom that may prove of distinctive importance bearing upon a diagnosis between hepatic abscess and subphrenic abscess, is that the diaphragm may be pushed upward in hepatic abscess, while in subphrenic abscess proper we may have the stomach pushed down and the intestines pressed forward. The most common and striking accompaniment of suppuration in any part of the body is a variable temperature and rigors.

In one case reported by Lees and Pepper, the temperature had reached 106°F. The symptoms pointed to an abscess near the stomach, but upon incision, as in gastrostomy, no pus was found, but the stomach had a lymph matting its walls to the intestines.

It was by aspiration in the seventh interspace, on the left side, that pus discovered, and this was found to come from below the diaphragm which had been penetrated by the needle.

In hepatic abscess we usually find hurried and abdominal respiration; while in subphrenic abscess there is slower respiration, but it is mostly confined to the thorax.

The pulse rate, or rather, heart-beat, per minute is slower than normal in hepatic abscess, owing to great pressure upward upon the heart, and to the left upon the abdominal aorta and the iliac vessels.

In hepatic abscess we may notice a displacement of the right lobe of the lungs, but in subphrenic abscess more particularly, the stomach, spleen and kidneys. We may have no means of differentiating these two affections, as to their side, as we have in appendicitis. But right hepatic abscess is far more commonly met with than abscess of the left lobe of the liver.

Empyema is usually unilateral, but we may have double empyema. At the same time in empyema we will usually find when it occurs on either side, a destruction of the vocal fremitus on the side affected, and displacement of the heart when empyema is on the left side. The complication of the two conditions must also be looked into, as pus may have burrowed through the diaphragm.

It is an important diagnostic device in empyema to observe the influence of gravity upon the collection of fluid in the pleural cavity. In the event the pus gravitates to the left side when the patient is put on that side, and no dullness exists on the right side, the strong presumption would be in favor of a unilateral empyema of the left pleural cavity.

When we see no change wrought by lateral position, or by placing the patient in an upright posture, then we suppose there may be a confusion arising from two sources, viz.: (1) A tense and unyielding pyogenic membrane with adhesions of the pleural, and again, (2) a consolidation of lung.

Subphrenic abscess, we are told by Curtis, has been traced to every organ of the abdomen. Curtis⁴ gives a slightly different method of differentiating affections of the liver, lungs and pleura, from subphrenic abscess. He advises that in percussion and auscultation, the examining physician note whether there is a cavity upwards or downwards in the area of dullness, and naturally suggests that the diaphragm will be domelike in subphrenic abscess from pressure upward, and a reverse condition or shape by pressure downward, in empyema.

TREATMENT.

Subphrenic abscess should be treated by early incision and drainage. Aspiration in this locality is not a safe procedure on account of the dangers of perforating the hollow viscera. The organ that gave rise to the abscess may be examined, and if any ulcer has perforated the stomach or abdomen the opening should be closed by suture.

Advantage of free drainage after operation is greater from the elevation of the head, and shoulders, and hips. This process is now very highly endorsed by Fowler in his treatise on "Appendicitis," in his revised edition.

Normal salt solution and peroxide of hydrogen are useful agents in irrigation of the abscess cavity, both during and after the operation, for evacuation of its contents.

Capt. W. C. C., aged 59, came from Montgomery, Alabama, during a bad epidemic of yellow fever.

Abscess of the liver was suspected by his physicians, Drs. Wilkinson and J. B. Gaston. In the effort to flee from yellow fever he came to Atlanta, and a letter from Dr. J. B. Gaston showed that it had been their intention to aspirate. He was put under the care of my father, Dr. J. Mc. Fadden Gaston, and myself, October 21, 1897.

Upon examination the liver was found very much enlarged, and a diagnosis of hepatitis was formed. With the strong hope of relieving his immediate symptoms we put him on a prescription of

⁴Twentieth Century Practice of Medicine, Volume VIII, pages 487-8-9 and 480.

R Massæ hydrargyri.....gr. xx
 Podophillin.....gr. ij
 Pulv. rhei.....gr. xxx

M. Divide into capsules, No. 10. Sig.—Take one every other night.

Another prescription, for external use, was given at the same time:

R Ung. hydrargyri.....
 Ung. belladonnæ.....
 Ung. iodidi.....
 Ung. camphoræ.....aa ʒij

M. Sig.—Rub well under margin of ribs. Cover with oiled silk.

On October 23, he was quite restless, and was given a combination of bromides of sodium, ammonium, potassium, lithium and calcium in teaspoonful doses in water.

Next day his pulse was 48, and very weak. Chest measured 16½ inches on the right side, in the semi circumference from the ensiform cartilage. Temperature was 100.4°F. The left side measured 17 inches as described for the other side. A total circumference of 33½ inches, and 3 inches lower, 15 inches on right and 18 inches on left—total 33 inches.

It will be observed that the bulging occurred below the ensiform cartilage, and very similar to a case of subphrenic abscess (Stockton).

On October 26, the temperature was 100.2°F. at noon, and at 5 P.M. 100.6°F. Pulse 72. Measurement of left side, as before, 17½ inches; right side, 17 inches; 3 inches below measured 18 inches and 17½ inches respectively. A greater distention on the left side was somewhat unexpected, but might be accounted for by pressure of organs to that side by the pus situated on the right side.

On October 28, an alterative mixture containing liq. arsenii et hydrargyri iodidi was prescribed.

As an additional hepatic derangement continued, and profuse sweating occurred at night on November 5, the use of the following was indicated:

R Acidi nitro hychlorici..... ʒij
 Aquæ distillatæ..... q. s. ʒij

M. Sig.—Take a teaspoonful in water, every six hours.

On November 13, the following combination was given for aiding expectoration, and as a general stimulant to the respiratory organs:

R Ammonii carbonatis..... ʒj
 Olei terebinthinæ..... ʒj
 Syrupi tolutani..... ʒj
 Aquæ camphoræ..... ʒij
 Mucilag. acaciæ..... q. s. ʒvj

M. Sig.—Take a tablespoonful every two hours.

On November 20, his temperature was 100°F.; pulse 90; breathing clearer on both sides.

Morning temperature 99°F., pulse 120, respiration 36; evening temperature 99°F., pulse 110, respiration 32. The right side was somewhat dull; flatness was noted on percussion of the left side. On this day a prescription, to combat the symptoms of pain and difficult breathing, was given, as follows:

R. Hydrarg. chloridi mitis..... gr. j
 Pulv. ipecac et opii gr. xxx
 Quiniæ sulphatis..... gr. xxx
 Pulv. camphoræ..... gr. j

M. Divide into capsules, No. 12. Sig.—Take one every night and morning.

After these were given his condition seemed better, with a normal temperature; especially was the left lung clearer of mucus; no liver dullness below ribs; puncture of aspirator under ribs had healed, and at 5:15 P.M., temperature 99.6°F., respiration 32, pulse 96.

November 22, 5 P.M., temperature 98.7°F., pulse 90, respiration 32; 12:30 P.M., temperature 98.4°F., pulse 100, respiration 34. When asleep his respiration dropped to 19; he sweated a good deal; at one time his respiration was 18 while asleep; the tenderness over the median line is considerable.

Percussion reveals dullness over median line; no pain or suffocation was noted in the region of the lungs.

November 23, his weak condition necessitated an effort to build up his system, and he was put on an iron tonic in full doses; 5:30 P.M., temperature 98°F., pulse 90, respiration 36. At 10 P.M. his temperature was 98°F., pulse 80, and respiration 40.

On November 24, at 1 P.M., his pulse was 60, and weaker, his temperature 97°F., while the respiration was not taken; the temperature, later in the afternoon, was 96.8°F., pulse 80, and respiration 40.

November 25, 2:30 A.M. Being called out at this hour of the night his temperature was not taken, but his pulse was 100, and feeble; respiration 48. A teaspoonful of the tonic was given, also a hypodermic injection of $\frac{1}{32}$ grain strychnia nitrate with $\frac{1}{8}$ grain of morphine sulphate. Before leaving, his respiration had been reduced to 20 per minute. He died at 6:30 A.M. His respiration had again reached 48, while temperature was 95°F., when seen shortly before the end. His condition was very much improved by the relief of pressure afforded by an operation performed two weeks before his death.

Aspiration was first performed in the region of the liver below the ribs by my father, Dr. J. Mc. Fadden Gaston. The aspirating needle was clogged with blood, and no distinct ev-

idence of whether the needle touched the focus of pus was obtained. He was put under the anesthetic for the second time, and I inserted the needle into the interspace between the eighth and ninth ribs, when a quantity of pus was drawn off, estimated at a pint and a half.

The pus was examined microscopically by Dr. F. S. Bourns, who was then pathologist of the Southern Medical College. The evidence of liver cells was sufficient, and various streptococci were found in the pus.

[228-9 PRUDENTIAL BUILDING.]

The Present Position of the Diagnosis of Cancer of the Stomach.

By ALOIS B. GRAHAM, A.M., M.D.,

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CANCER of the stomach is universally regarded as an incurable disease, and when diagnosed its treatment is mainly symptomatic and palliative. Although an incurable malady, yet if recognized in its early stages of development we have reason to believe the rapidity of its course, in some of its forms, may be considerably modified by appropriate treatment, and the comfort and strength of the patient maintained even for many years.

The causes of cancer and the conditions which give rise to its development are unknown. Statistics reveal the fact that those places along the digestive canal which are subjected to the most marked mechanical irritations are most frequently the seat of malignant disease. The stomach is exposed to great mechanical as well as chemical irritations. It receives the food in a coarse state and, according to Virchow, it is the organ most often attacked with cancer. The cardia, and especially the pylorus, are chiefly involved, four-fifths of the cases being limited to that comparatively small portion of the stomach containing its two orifices. The cardia is subjected to the friction of the food passing through it, while the pylorus is constantly irritated by the acid chyme as well as by some

coarse particles of food which, by the churning motions of the stomach, are constantly carried toward that outlet.

The diagnosis of malignant neoplasms involving the stomach may be impossible, difficult or easy. Consequently, we may be without suspicion, doubtful or certain of the existence of a cancer in a particular case. We divide cases of cancer of the stomach into two large classes, accordingly as a tumor can or cannot be detected. If tumor cannot be detected one of the most valuable signs is wanting. The diagnosis of a malignant neoplasm, when a tumor cannot be discovered, and before nutrition is so reduced as to suggest a serious und perhaps cancerous growth, is a mere question of possibilities.

The symptoms of cancer of the stomach are not always diagnostic, inasmuch as many of them are common also to chronic gastritis and chronic gastric ulcer. The pain after taking food, the anorexia, the flatulence, the vomiting, the sour eructations, the progressive emaciation, the occurrence of hematemesis, the constipation, the presence of blood in the stools, the tenderness in the epigastric region, and the signs of dilatation of the stomach may all exist without the existence of cancer, and it is on this account that it is impossible to diagnose, with accuracy, the presence of cancer of the stomach, unless there are clear signs of a tumor in the epigastrium. But there are certain early signs which should not only excite suspicion but should cause at least a careful search and guarded opinion. Taken collectively, they may point strongly to the existence of cancer, although not any of them alone may be absolutely diagnostic.

The attainment of a certain age seems to be one of the conditions of its occurrence, being especially a disease of middle and advanced life. It is rarely encountered in persons under thirty years of age. However, cases in which the disease was congenital have been reported.

The influence of sex is far more difficult to estimate than that of age. Statistics show a higher percentage for men than women.

It is quite difficult to state whether heredity plays an important part. Cancer of the stomach is almost always primary, and secondary malignant growths must be considered a great rarity. However, it may co-exist with primary cancer of some other organ.

Cachexia is present in almost all cases. It is an important

symptom. It is the peculiar color of the complexion which is associated with the emaciation—that aspect which has been termed “earthy,” or “waxy,” or “fawn yellow,” or “dirty yellow” cachectic color, none of these terms expressing very well the peculiar type of complexion which so commonly accompanies malignant visceral disease, but which is readily recognized by the experienced eye.

Anorexia is usually much more complete and persistent in cancer than in chronic ulcer or chronic catarrhal gastritis. It is sometimes delayed until a comparatively late period. It is not caused by any fear of pain the ingested food may invoke, but is attributable to a direct lesion of the nerve centre of hunger. There is a real loss of appetite, or no desire, no inclination to take food.

Pain is the most constant of all symptoms. Its situation does not always correspond to the site of the lesion. It begins at a comparatively early date and soon assumes a marked severity. Often all other symptoms are relegated to the background. It is characteristic in that it never entirely disappears. There may be remissions in the severity, but there are never any free periods. In but few cases it is excited by the ingestion of food. Vomiting nor the end of gastric digestion does not relieve it.

Vomiting is largely dependent upon the situation of the cancer, occurring more frequently when the orifices are involved. It may take place after the ingestion of food or independent of it. In cancerous obstruction of the pylorus, it may not take place until some hours after the reception of food, and may be extremely copious from the co-existence of great dilatation of the stomach. When the cardiac orifice is the seat of cancer there is usually some dysphagia, and the food is regurgitated, rather than vomited, almost immediately after it is taken, unchanged or simply mixed with mucus. Whenever we find this persistent regurgitation of food, with signs of atrophy of the stomach, such as sinking in of the epigastrium and a difficulty or inability to pass the esophageal bougie, together with the presence of a cachectic aspect, the existence of cancer of the cardia is pretty certain.

Hemorrhage may in some cases be recognized with the naked eye. “Coffee grounds” vomit is observed in many cases of advanced gastric cancer. The hemorrhages are small and not copious as seen in chronic gastric ulcer. The pres-

ence of blood in the stools—*maelena*—is often observed in gastric cancer, when there may be no blood in the matters vomited or when vomiting is absent.

Fever is not a regular symptom, but is met with more frequently than is generally believed. It usually appears in the latest stage and is always a bad omen. It is due to either an inflammatory process in the neighborhood of the neoplasm, or more frequently to absorption of a toxic material from the ulcerated areas of the tumor.

Constipation, which is usually very obstinate and is probably due to the small amount of food digested and passing out of the stomach, is a symptom which has to be considered. It is present in the majority of cases.

In all doubtful cases, a chemical examination of the stomach contents should be made a part of routine work. A few years ago, if upon examining the stomach contents after a test meal had been taken, lactic acid was found to be present and an absence of free hydrochloric acid, this combination of symptoms was considered by many physicians to be pathognomonic of cancer of the stomach. The presence or absence of hydrochloric acid is of no special diagnostic importance. Nor is it pathognomonic of any affection or class of affections.

Hydrochloric acid of itself means very little, but derives all its diagnostic value from the combination of circumstances in which it is found increased or diminished. It is a mistake to make too much or too little hydrochloric acid pathognomonic of any special condition, and further observation and experience have brought most physicians to the same opinion. It is probable that either condition may exist without any organic affection of the stomach at all. We know too little of the specific etiology of abnormal secretion in the stomach to make its varying conditions pathognomonic of any special pathological condition. Without any definite significance whatever, great variations in acidity occur, and these variations cannot be considered abnormal unless other symptoms accompany this condition.

However, the absence of hydrochloric acid, when combined with other symptoms, often forms a most confirmatory symptom. It is deserving of a great deal of consideration and its value must not be placed too low. For example, we have a case in which there is considerable emaciation, a profound cachexia, a palpable tumor in the epigastrium—symptoms, all

of which, when combined, point to cancer of the stomach—and yet, with such symptoms present, free hydrochloric acid can be detected during the digestion of a test meal. In such a case we may conclude that the malignant growth has taken its origin in an ulcer. By carefully questioning the patient, we can often confirm our diagnosis, for he will give a history of former sharp pains after taking food, with repeated hematemesis or passage of dark stools.

Regarding the presence or absence of hydrochloric acid in cancer of the stomach, we may conclude as follows :

1. Its presence speaks against cancer, though of course when other symptoms are absent too. If there is an epigastric tumor, emaciation and beginning cachexia, then its presence is of no significance.

2. The absence of hydrochloric acid establishes the diagnosis of cancer if two of the classical symptoms—emaciation and tumor—are present. It makes the diagnosis extremely probable if, besides beginning cachexia, there are symptoms of stenosis of the pylorus, running the clinical course that a malignant neoplasm of this region usually does.

3. For the differential diagnosis of gastric ulcer from cancer, the presence of hydrochloric acid, where no tumor can be discovered, speaks for ulcer; while the failure to detect hydrochloric acid is against the diagnosis of ulcer.

Now as to the significance of lactic acid in the stomach contents, as it is the only organic acid of any importance. When testing be sure that no lactic acid has been introduced with the food. Of itself this acid is not pathognomic of any condition. Although its presence has lost its pathognomic significance in cancer, yet it still remains the surest symptom we have in cases where no tumor is palpable. In cases where there is only an absence of hydrochloric acid, unless other symptoms are present, we are in doubt as to the existing condition. But if in addition we can detect the presence of lactic acid, then there is a strong suspicion of the presence of cancer.

Transillumination gives the best results with regard to the recognition of the presence of tumors and the determination of their situation. The tumor being not translucent, it is visible as a dark spot within the red transilluminated zone of the abdominal wall. The presence of a tumor may be detected even when it is not accessible to palpation.

Whether the gastroscope and the Roentgen rays will en-

able us to make an early diagnosis, remains an open question. The gastroscope has not fulfilled its promise. Much experimental work is being done with the X-rays, but as yet it has not given any results that are more helpful than those to be obtained with transillumination by means of the gastro-diaphane. Again there is always the latent period of beginning cancer when there are no symptoms to suggest the use of any diagnostic method.

Gastric curettage is the very latest method of procedure. It is practiced with a soft rubber tube run in and out. There is no hope of seeing carcinomatous architecture, but the cell nuclei reveal certain changes now thought to be constant and characteristic.

If the physician find that a stomach case is not improving under general medical and dietetic treatment, and if the symptoms be such as to awaken a grave suspicion of malignancy, while at the same time it is not possible to make a positive diagnosis, he should call the surgeon to his aid and seek for enlightenment by an exploratory incision. Two good results may follow. Either the surgeon discovers a tumor, which may be amenable to operative treatment, curative or palliative, or else it may happen that nothing positive is discovered, and yet in some inexplicable way the simple making of an incision produces relief of symptoms.

The diagnosis of cancer of the stomach can be positively made under the following conditions:

1. If particles of tumor are found (in the tube after gastric curettage or in the wash water after lavage) which reveal the characteristic picture of a malignant growth under the microscope.
2. The presence of a tumor belonging to the stomach, and associated with dyspeptic symptoms.
3. The presence of a tumor associated with frequent hematemesis.

It seems reasonable that an early diagnosis of gastric cancer is extremely difficult to reach. We must concede that our methods are still comparatively crude, and as a rule permit us to recognize the malignant affection at a stage when it has already progressed to a considerable extent. In the early stages of development of the cancer nodule, there is either no symptom or no characteristic one.

In conclusion, what can be said with regard to the present position of the diagnosis of cancer of the stomach?

1. Careful investigations have brought us no pathognomonic symptom.
2. We must consider carefully all the circumstances of the case in order to make a proper diagnosis.
3. Experience in the handling of cases has not as yet been superseded by ready made tests that make a diagnosis for us.

[224 NORTH MERIDIAN STREET.]

Report of a Case of Anthrax.

By AMAND RAVOLD, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, April 4, 1901.

THE patient, Mrs. Z., age 38 years, white, married, mother of two children, has suffered for some years with chronic nephritis; is fairly well nourished but anemic. September 29, while scrubbing a slate drainage board attached to one side of her kitchen sink, ran a small splinter of slate into the outer surface of the first phalanx of the little finger of her right hand; the splinter was a small one and broke off even with the surface of the skin; she dug out the splinter with a pin which she heated in a gas flame before using; the splinter was very friable and she experienced a good deal of trouble in removing it, but afterwards continued at work. That night the wound pained enough to interfere somewhat with sleep, and by noon the next day, twenty-four hours after the injury, the pain, now of a throbbing character, was so severe that she came to me for relief.

The site of the splinter could be made out distinctly by a dark line, about 7 millimeters in length, beneath the skin; it seemed to me a very trivial wound to be the source of so much suffering, nevertheless I open it up with a sharp bistoury. The small amount of debris along the line made by the splinter was carefully cleaned out, and the wound washed out with a solution made up of 5 per cent carbolic acid, to which is added corrosive sublimate sufficient to make $\frac{1}{1000}$, and hydrochloric acid .5 per cent. This is a strong and penetrating disinfectant. The solution was rubbed into the wound and kept in it for about five minutes; the finger was then washed in sterile water,

wrapped in corrosive sublimate gauze covered with rubber tissue and a bandage. Patient left with the pain very much relieved.

October 3, she came to my office and said that up until that morning she had been free from pain in the wound, but that now it was of a throbbing character and as severe as when I first saw her. She certainly had the appearance of one suffering severe pain. Inspection shows a slightly inflamed wound with a small drop of pus in its depth. This was cleaned out, the wound again disinfected with the carbolic acid and corrosive sublimate solution, dressed as before and the patient left practically free from pain, with instructions to wash the wound every morning with a $1/2000$ solution of corrosive sublimate, and to dress it with gauze and rubber tissue, of which I gave her enough to last several days.

October 8, five days later, she again came to my office complaining of a throbbing pain in the wound which had begun in the night. I found the finger much swollen and indurated. The wound was nearly healed, with no pus in it, but a vesicle had formed about it and extended across the upper surface of the finger, between the nail and joint, then down along the inner surface of the finger as far as the second joint. I split open the vesicle, washed it out with a $1/2000$ solution of corrosive sublimate, and dressed it with powdered boracic acid, gauze, rubber tissue and bandage. I requested her to return the next day, for I feared that I had poisoned her with the carbolic acid and corrosive sublimate solution, and had another case to add to the long list of dermal poisoning with carbolic acid.

I did not hear from her until early on the morning of October 11, when I was called to the patient's home, and found her in bed recovering from an hysterical attack brought on, she said, the night before by the throbbing pain in the little finger, and in which she had been attended by Drs. J. M. Grant and S. Klein. She now complained of intense pain in the wound; I removed the dressing which she had about the finger and hand, and found the finger, hand and forearm much swollen, with the glands in the axilla tender but not perceptibly enlarged; a hemorrhagic vesicle had formed in the area of the first vesicle and the skin about the edges of the vesicle was black and necrotic looking; the vesicle was incised and from the dark bloody fluid which discharged, a swab culture was made on Loeffler's medium, a tube of which I fortunately had in my valise; I also snipped out a small piece of the necrotic area, which after dressing the wound I took to my laboratory; the small piece of necrotic tissue was stirred about in melted agar, plated in Petri dishes and put in an incubator at 37°C . That afternoon the patient was much easier, temperature 101°F ., pulse 110, urine contained .5 per cent of albumin and a large number of small and large hyaline, epithelial and granular casts.

October 12, agar plate showed a number of characteristic anthrax

colonies; cover glass preparations were made from several of the colonies and from the growth in the culture tube; all showed a large, thick bacillus with squared ends, which stained easily, but no spores could be demonstrated in the bacilli. The diagnosis was now clear, my patient was suffering with anthrax (malignant carbuncle); I hurried to her home and found her suffering with increased pain, very nervous, temperature 102.2°F., pulse 108, and had slept very little during the night; wound showed necrotic tissue in all of the area occupied by the hemorrhagic vesicle, but no new vesicles had formed; wound was anesthetized with 5 per cent cocaine solution and the entire necrotic area thoroughly curetted, then cauterized with pure carbolic acid, washed in sterile water and dressed with sublimate gauze.

Temperature returned to the normal on the third day; swelling of hand and arm soon disappeared, but the wound on the finger healed slowly.

Patient made an uninterrupted recovery.

The puzzling question in this case is, where did the infectious material come from? Was it conveyed to the wound by the splinter, the pin, the brush, the knife with which the wound was cleansed, or in some other way?

The drainage board from which the splinter came, is of slate, with grooves cut in it which deepen as they approach the sink. Meat, when it comes from the butcher, is sometimes placed on the drainage board, and it is within the range of possibility that anthrax bacilli were sown into it from a piece of diseased meat. However, cultures made from scrapings of the board failed to show the anthrax bacillus. The pin was flamed before being used to dig out the splinter. The scrubbing-brush was a new one, having been purchased that morning, and its bristles were not of animal, but of some kind of vegetable fibre. The knife with which the wound was scraped was first dipped in alcohol, and the alcohol burned off before using, which insures sterilization.

Anthrax is very rare among cattle in this region. In 1895, however, quite a number of cases of the disease were discovered among the dairy cattle of the city, but it was quickly suppressed by the energetic action of Health Commissioner Dr. Max C. Starkloff, who quarantined all infected stables and destroyed and incinerated all diseased animals. To the knowledge of the health authorities, no case of the disease has occurred among cattle in this vicinity since that date. A case of the disease in man was reported from St.

Louis county in June, 1900, by Drs. Elsworth Smith and H. G. Mudd. The origin of the infection in this case is unknown, which must also be declared of my case.

The bacteriologic examination of bacillus found in necrotic tissue from Mrs. Z., was as follows:

Bacillus, square ends, 3 to 5 m. in length. Isolated and in chain. Nonmotile. Forms spores in center of rod.

Stains easily with watery solutions of the basic aniline dyes. Decolorizes slowly when stained according to Gram.

Spores stain with Ziehls' carbolic fuchsin.

It grows freely on broth, forming a thick white granular deposit, with small flocculent masses clinging to side of tube.

Gelatine plate, after six days at 20°C. shows small and large colonies, nearly all showing small amount of liquefaction; colonies under low power of microscope show finely, granular center with wavy threads extending out at some length from center, giving the so-called Medusa head appearance.

Gelatine cultures show a yellowish white growth along the thrust, with small spiculæ of growth extending out at right angles from it, giving a root-like appearance.

Glucose gelatine, slowly liquefied but no gas produced.

Milk, coagulated and casein liquified.

Potato, thick smeary yellowish brown growth.

Guinea pig weighing 465 grammes, injected subcutaneously into abdominal wall with 1 cc. of 48-hour old broth culture. Died in 60 hours.

On post-mortem, made the same day, the abdomen was found to be swollen, the swelling extending to chest wall. Subcutaneously tissue, semi-fluid and gelatinous, with ecchymotic spots scattered through it. Lungs pale. Heart cavities distended with blood. Liver somewhat enlarged, with cloudy swelling. Spleen very much enlarged, dark, soft, friable. Kidneys congested.

Bacillus found in smear cover glass preparations made from heart blood and spleen pulp.

Diagnosis.—Bacillus anthracis.

EDITORIAL.

REORGANIZATION OF THE AMERICAN MEDICAL ASSOCIATION.

Of the varied and various privileges which are a birthright to the American citizen there is not one so highly cherished as that of free speech. It is his right to express his opinion regarding matters of a public nature in which he has an interest, and this right he exercises fully whenever the opportunity is given for him to do so. This can not be denied to him and at some stage of the discussion of questions, whether of a political, social, religious nature or what not, he must and will be heard. In the discussions of questions before ~~large~~ assemblies it becomes almost impossible to close the flood-gates of oratory owing to the desire of each of its members to be heard, with a resulting effect that too frequently the question under discussion never reaches a vote from lack of time, and is, in truth, talked to death.

Such a condition now confronts the American Medical Association. Its membership and the attendance at its annual meetings have become so large that it is almost impossible to transact business matters which are essential but not strictly scientific. For this and for the other reasons which its Committee on Reorganization have advanced this Association must be reconstructed. This has become a necessity. Upon a much smaller and a more carefully-selected delegated body should be conferred the legislative voting power. It is only in this way that the legislative questions which come before the profession can receive proper consideration and prompt action thereon.

The plan of the Committee for the federation and interdependence of the National, State and County Societies is an excellent one. Membership in the county society becomes a prerequisite to membership in the other organizations. The county organization thus becomes an unit of the state association, and the state of the National body. Each is thereby strengthened and made more powerful,

each becomes more cohesive and each develops into an effective, offensive or defensive organization which will command respect and consideration because it represents an organized power which is able to reward or punish, both its friends and its enemies. The medical profession in America is large in numbers but it lacks stability and cohesiveness when called upon to protect its interests against agencies that are detrimental to its welfare. In this it, in no small manner, is similar to that Asiatic nation, the so-called celestial kingdom, which is great in numbers but whose slight stability and cohesive power renders it an easy victim to its enemies.

Reorganization of the medical profession in America is a necessity. This must begin in the county society which is to form the basic part upon which the entire fabric of an organized profession must rest. Upon these is to be built the state organization, and from the state societies must come the chosen few who are to wear the senatorial togas in the parliamentary body of the American Medical Association, the body that is to formulate the policy of the profession on matters of vital interests, the body that is to aid destiny to shape our ends to a satisfactory conclusion, rough hewn though they may be, the recommended House of Delegates of the American Medical Association.

As recommended by the Committee, regional, tri state and district societies, save in a few instances, should be abolished. These, as at present constituted, serve but a slight purpose for good, while on the other hand they weaken and detract from the county and state societies that as federated units are essential to the integrity of the National Association. They are parasitic growths on the medical body politic which sap the life strength of the National organization, and as such should be lopped off and be allowed to perish. Let their friends and promoters devote their energies to the upbuilding of their respective state and county societies where their efforts will add to the strength of the profession as a body, and where they will hasten and not hinder the consummation of professional unity.

In the trinity of National, state and county organizations, a federated union, in which each is developed to its greatest possibilities, will the profession find a power, that, like faith, can move mountains.

A FERTILE FIELD FOR PHILANTHROPISTS.

It has been recently announced that Mr. John D. Rockefeller has made a gift of \$200,000, which is to be devoted, principal and interest, to the encouragement of medical research. As far as we know this is the first instance of the setting apart of such a considerable sum for such a purpose, unconnected with any special institution.

The facilities of the great American universities (Johns Hopkins, Columbia, Yale, Harvard, etc.) are to be taken advantage of in applying the fund to the ends in view. Just what direction the work will take is not, as yet, announced, but imagination takes each of us into certain chosen fields where we feel confident immense returns would be yielded. Since the publication of Mr. Andrew Carnegie's "Gospel of Wealth" we have begun to view multi-millionaires from a new point of view. And it is evident that many rich men have adopted the wholesome belief of the late Cornelius Vanderbilt, who looked upon the possession of great riches as a stewardship. Mr. D. K. Pearson is preaching by practice in administering on his great wealth during his lifetime, in accordance with Mr. Carnegie's dictum that it is as necessary to apply the gifts of mind which secured the great wealth to its possessor, as to apply the wealth itself, to the purposes to which it is to be devoted. Heretofore the great gifts have been made to colleges, libraries, parks and picture galleries. Mr. Rockefeller has himself given vast sums to educational institutions, notably Chicago University, but now he is leading in a new direction and proposes to use his great gifts of mind in aiding the accomplishment of what he conceives to be a great good to his kind.

It only occasionally happens that epoch-making results ensue from scientific research in the medical field, and the dearth of great discoveries may have a deterring effect upon the application by rich men of their money for this purpose. But all workers in medicine know that thousands of details need to be patiently worked out, the facts placed on a firmer basis and false knowledge eliminated.

It is to be hoped that when the results of Mr. Rockefeller's gift have been collated and published, they will prove of such value, both to the profession and the laity, that other men may follow with donations to continue a work which otherwise can not be carried out by laborers in this department of science. Devotion to original re-

search demands freedom from mere "pot boiling" work. Its votaries must acknowledge no mistress except science. No preparation can be made during the prosecution of original work for the struggle in the ordinary walks of medical life.

No one doubts that the benefit to humanity will be beyond estimate if sufficient money can be devoted to the thorough investigation, by minds freed from financial worry, of each department of medicine.

Let other philanthropists follow Mr. Rockefeller into this fertile field, and the human family will sing their praises for all time.

LEAPING BEYOND ESTABLISHED SCIENCE.

It must be conceded that a good knowledge of general science is invaluable to the practicing physician, but it is absolutely necessary to the medical teacher and writer. But, alas! So many writers must be woefully deficient in the established truths of biology, otherwise the disposition to overstep the recognized limits of science would be far less common. As it is, our medical literature is full of statements dogmatically asserted, which if true would extend the boundary of our knowledge outward to an enormous magnitude.

To paint a physical phenomenon as a fact for further inductive verification by others is plausible; but to be satisfied with a presumptive cause which is beyond our present knowledge needs to be criticised. For example, it is common to ascribe certain diseases to hereditary influences, but no attempt is made to ascertain if the present diathesis was acquired in the parent, for it is yet unproven, and it is exceedingly doubtful, that acquired characters are inherited. Hence, it follows that the condition of parental tuberculosis, gout or cancer should leave no special predisposition to these diseases in the offspring, if the disease has been acquired only in the previous generation. We should, therefore, be exceedingly cautious in ascribing a disease or diathesis to an acquired ancestral condition.

Another example is furnished by the internal administration of certain substances, the osmotic pressure of which is so low that it is exceedingly unlikely that it is absorbed. Such are the petroleum emulsions which are recommended for a great variety of diseases.

These hydro-carbons are not tissue fats and it is to be expected that the intestinal fluids and the absorptive power of the villi can not cope with them.

Another biological law which is commonly ignored is that of adaptation to new conditions. This is applicable to both physiologic and pathologic processes. But this adjustment of internal relations to external relations is not instantaneous, but usually requires more or less time. If an enormous augmentation of work is thrown upon the heart, we must not expect the adaptation to be effected instantaneously. Or again, in the case of an infant who is placed on artificial food, the adjustment to the new relation requires time, and no medication is likely to shorten it.

In our efforts to promote prophylaxis we are often carried beyond this law. In order to save disease or disorder for the few, we may do an incalculable harm to the many. Thus it is now being insisted that the courses in our schools are too arduous, that the strained life of the student induces neurasthenia and nervous debility. While, no doubt, this is true with a few, it must be admitted that a powerful stimulus produces healthy growth, and minds which are to accomplish much in the future must be gradually accustomed to hard mental labor.

It has been urged that competitive examinations be forbidden. But it is true that real life is full of competition. And school life should be the portal to it. The highest faculties are developed only under the stimulus of a strenuous competition, and because a few fail or are injured, to advocate the abrogation of the whole system strikes boldly at one of the first principles of biology.

It may as well be urged that athletics and competitive exercises be abolished, since a few individuals are crippled. Running should not be forbidden because a few acquire a dilated heart from this exercise. In this struggle, in this battle, a few may be injured. They must stop at the wayside while the others struggle on. But the race must not be discontinued because a few fall.

It follows, therefore, that those who urge the substitution of easy methods for the exacting and laborious duties of modern school life, are stepping beyond the biologic law, that prolonged effort strengthens the physical and mental organism, and the law of adaptation causes a growth in correspondence to the demands made on the organ. Of course, the limits of this process must be recognized, and, as in all

human things, the judicious use and not the careless abuse must be sought.

A BETTER KNOWLEDGE OF THERAPEUTICS A DESIDERATUM.

In his article in this issue Professor Rotch, of Harvard University, calls attention to a department of medical study that is too frequently neglected and often insufficiently studied of all the fields of medical knowledge. The subject of therapeutics as taught and studied in a majority of the American medical colleges falls far short of the thoroughness that is bestowed upon other branches of the medical curriculum, and results in a condition that places the young medical graduate at a serious disadvantage in the early years of his practice. There can be no question regarding the value to the student of laboratory study of the action of various drugs, both chemical and therapeutic, as a broad basis for the later clinical study at the bedside, and Professor Rotch justly lays proper emphasis upon this as a preliminary necessity for a thorough appreciation of its effects in a later study upon the human being. Rotch pertinently calls attention to a number of faults in the present and too common method of teaching therapeutics when he says that too little attention and time are given to the elementary principles of therapeutics in comparison with that given to the other primary branches of medicine and surgery; and again as a result of this scanty knowledge of therapeutics the young practitioner too often becomes a believer in the efficacy of a drug on the strength of claims that are made for it not wisely but too well, and too frequently he is unable to distinguish the good from the bad owing to his lack of a thorough knowledge of its therapeutic effects. His objection to the laboratory teacher attempting to give the clinical side of the subject for which he is often unfit from the lack of continued clinical experience, is noteworthy, as is that of the clinical teacher who, after making an elaborate diagnosis dismisses the question of therapeutics in a few words. Too frequently other therapeutic measures than drugs are entirely overlooked, and of these none has a more important place than diet, particularly that of infants which is too often but briefly mentioned.

Rotch adds at the close of his article that too little instruction is given to the student in the simple and common sense details connected with the administration of drugs. These are wholesome truths and one of which many a young practitioner fully realizes the need after a short time in general practice.

There is nothing so essential to the physician as a thorough knowledge of therapeutics, and there is probably not one subject in the science of medicine of which the study is so incomplete.

PROGRESSIVENESS.

The one most characteristic trait of the science of medicine is its progressiveness. The constant evolution which characterizes its life-history causes that which to-day is thought to be near to perfection, to be discarded for something better to-morrow. In medical publications the demand is constantly for something better, for a higher class of matter, quality rather than quantity, and the successful publication must meet this demand or fall back in the race. This conclusive proof of the wants of the profession is an unerring indication that the profession, as a whole, is rapidly reaching a higher plane of thorough professional knowledge and attainments, and that this condition is wide spread is evidenced by the wide area of distribution of the journals of the higher class, showing a healthy demand for a mental pabulum of good quality.

From the first we have endeavored to give to our readers a journal worthy of their consideration and respect, a journal worthy of more than a passing glance, and one that would contain something of interest that would claim the attention of the reader at even a busy moment. We have felt that there was nothing too good for our readers and we have labored to that end that we might have their approval in their support. The rapid growth of the circulation of the *COURIER* is a gratifying compliment to our efforts. Their kindly expressions and the reproduction of our editorial references by our exchanges, though often undeserved, has been a joy that scattered the sometimes editorial sorrows and has given rise to thoughts of demanding a raise of salary. That our pages have been found worthy of their contributions

by a large number of the most prominent members of the profession is an honor to which we are deeply sensible and one which we shall strive to continue to merit. This has been one of the sweetest pleasures of our editorial efforts.

Conscious of the appreciation of our patrons for the best that we can give them, we have been led to depart somewhat from the size that has formerly characterized the *COURIER*, and, beginning with this issue, to present to our readers, a journal of increased size and, we trust, a more attractive appearance. We have changed from a medium to a large octavo in size, which will give an increase of ten per cent in the amount of reading matter over that formerly contained in its pages. This, with an increased margin, will give a more pleasing appearance to our publication, and which change we believe will meet with the hearty approbation of our friends and well-wishers to whom we owe a debt of gratitude for their support in making this, as they have done, the leading medical journal of the West. To these we give our heartiest thanks.

Other changes are in contemplation which will further add to its attractiveness, and these will be made from time to time to meet the growing demand upon its various pages. The interests of our readers will be safeguarded and the character of its contents will be kept above reproach.

The Incomes of Physicians in Berlin.—For the support of the Medical Chamber of Berlin, including the province of Brandenburg, and also for the support of the needy members of the profession in that district, a tax is levied upon the profession at a rate of \$2 50 each annually, with an additional sum upon those earning more than \$1,250 annually, according to the *London Lancet*. Of 1,946 medical men in Berlin under the jurisdiction of the Chamber, it was found that 529 earned from \$225 to \$750 annually, 273 from \$750 to \$1,250, and 785 more than \$1,250; the largest income amounting to \$73,750; 107 were found to have no taxable income whatever, and that of 250 could not be ascertained. In the other towns of the province 4 per cent of all the physicians had no taxable income, 26 per cent from \$225 to \$750, 17 per cent from \$750 to \$1,250, and 40 per cent more than \$1,250. Possibly there is a sudden atrophy of their incomes when the returns are to be given to the assessor.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of April 4, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. AMAND RAVOLD reported (see page 47) a case of

Anthrax.

DISCUSSION.

DR. GRADWOHL said it seemed to be a clear case of anthrax infection. It is a disease of cattle and seldom affects man except those who handle wool and hides. It is rather common in Russia and Germany among those who handle wool and hides; he had seen one fatal case in Germany. The disease is practically extinct in France, where the vaccine method was instituted among the lambs and sheep; it was formerly very common there. In Russia the disease also affects horses and men engaged in handling the hair of horses' tails—which is an industry—suffer from the disease.

In this connection he spoke of the recent work of two men in Vienna on anthrax in which it was endeavored to show that symptomatic anthrax was rather common in rag-pickers. The speaker thought this was not the real anthrax bacillus but another which resembles it closely morphologically and pathologically. These men tried to show that there was no such thing as anthrax. Dr. Gradwohl felt convinced that the bacillus which they described was nothing but the bacillus *aerogenes capsulatus* which Welch, of Johns Hopkins, had already discovered. It seemed to him another instance of European investigators neglecting to look up the literature and failing to see the work of Americans.

DR. RAVOLD, answering several inquiries, said that no one was justified in making a diagnosis of anthrax, unless the case was well advanced, without the aid of the microscope and culture tubes. He had hoped that some one would have discussed the question as to

how the bacillus got into the wound ; as for himself, although he had made diligent inquiry, he could not account for it. As to whether dipping a knife into alcohol and then burning it off would sterilize the blade without injury to the temper, he knew positively that the procedure would insure sterilization, but as to injuring the temper and dulling the edge he was not so certain ; he would not treat a delicate instrument in that way. He wished to emphasize the fact that in this case he was certain that he was dealing with a case of carbolic acid necrosis and was very greatly surprised and alarmed at the bacteriological evidence. Hereafter, he would not only have recourse to bacteriological aid early in such cases, but would use pure carbolic acid in all suspicious wounds, because the pure acid penetrates deeply and destroys spores of anthrax and tetanus in a very short while.

The Pennsylvania Society for the Prevention of Tuberculosis.—The Annual Meeting of the Pennsylvania Society for the Prevention of Tuberculosis was held in Philadelphia on April 11, 1901. The secretary reported that during the past year the Society had published and distributed over 30,000 of its tracts, and had used constant efforts to induce those in influential positions to aid in preventing the spread of the disease. The Society used its influence to secure the new rule of the Bureau of Health, by which cases of tuberculosis are to be registered in Philadelphia. It has published a leaflet on the subject of Registration. Its publications have been sent all over the United States in response to many requests. Its officers have endorsed and assisted the Free Hospital for Poor Consumptives of Philadelphia, and have gone to the New Jersey Legislature to assist in pleading for a hospital for consumptives in that state. The Society has made strong efforts to show the need of a state hospital for consumption in Pennsylvania.

The treasurer's report showed a balance of \$241.68.

The following officers, including a board of fifteen directors, were elected : President, Dr. Guy Hinsdale ; Vice Presidents, Dr. H. S. Anders, Dr. J. Solis-Cohen, Dr. Benjamin Lee, Mrs. W. F. Jenks, Dr. Talcott Williams, Dr. S. A. Knopf, Mr. Samuel Castner, Dr. S. C. Dixon, Dr. L. F. Flick, Dr. William Moss, Miss E. W. Redfield ; Secretary, Dr. Alex. Heron Davisson ; Treasurer, The Commonwealth Title Insurance and Trust Co.

REPORTS ON PROGRESS

DERMATOLOGY.

Some Unusual Cases of Tinea Versicolor.

Charles W. Allen (*Journal of the American Medical Association*, April 6, 1901) states that competent observers have reported cases in subjects under 10 years of age. He quotes Gottheil's report of an extraordinary manifestation in the shape of a black patch continuing for fifteen years on the palm, in a physician. In the last three years he has observed the disease on the face in a number of instances. Only very exceptionally has he found phthisis as a concomitant. He makes the clinical point that there may often be found, in either sex, among the pubic hairs, a patch of the fungus which ordinarily escapes treatment and, therefore, often becomes a source of renewed infection. Other points at which the disease may linger are about fine hairs or follicular openings, the fungus dipping down a short distance; close inspection will discover small brown points at these situations; here the disease may persist after an apparent cure. The writer paints the patches with tincture of iodine or Lugol's solution, for diagnostic purposes. The patches take on a dark mahogany tint, permitting one to easily recognize them. Pigmentations, exudations, etc., will not give this reaction, but pityriasis rosea and ringworm will.

Skin Lesions of the English Epidemic of Arsenical Beer Poisoning.

Medical literature in England has recently contained much about the wholesale arsenic poisoning which occurred last year among beer drinkers in the north and midland countries.

H. G. Brooke and Leslie Roberts (*Brit. Journ. of Dermat.*, April, 1901) state that the drug is present as an impurity in sulphuric acid made from the sulphur from certain localities where arsenic occurs in combination. Sulphuric acid is used in converting starch into glucose, and the latter thus carries the arsenic into the beer.

Of the visceral and nervous symptoms noticed, it is not our province to speak. The cutaneous symptoms were striking and varied.

The most striking feature was swelling, heat and pain about the hands and feet, so that work had to be abandoned. The skin of the palms and soles was thickened and perspired profusely. These phenomena were symmetrical. Later, the redness spread to the backs of the hands and feet and up the wrists. The faces were flushed and swollen or cyanotic, the eyes suffused and watery. Some showed on the body or limbs rashes resembling measles or scarlatina; these rashes were generally followed by a rough flaky scaling and dirty look of the skin. In some instances the limbs and sometimes the body were covered with brilliant red, blue or lurid blotches of different shapes and sizes, after these began to scale the cases at a little distance were much like psoriasis; again, the lesions below the elbows and knees were much like lichen planus.

The pigmentation varied from slight to very deep. It occurred in the paralytic cases as well as in those in which the cutaneous lesions predominated. It is not the bronzing of Addison's disease, but an earthy hue—"an unwashed appearance," occasionally a dirty-brown, approaching black. It is not marked in covered portions, and may develop independently of erythema or hyperkeratosis. Herpes zoster, of course, occurred; large vesicular and bullous eruptions were rare. The symptom *par excellence* is hyperkeratosis. While finding its extreme expression in the palms and soles, it is by no means limited to these regions. Many cases presented on the palms and soles arsenical warts, peculiar, small flat nodules of horny tissue which look as if the skin were raised into little hillocks.

GRINDON.

GENITO-URINARY DISEASES.

The Operation of Litholapaxy.

Pedersen (*Post Graduate*, May, 1901.) calls attention to the fact that the operation of litholapaxy is one requiring special skill on the part of the operator, and reiterates the old axiom that it is an operation of choice. Concerning preparatory treatment of the patient, he follows the lines laid down in the up-to-date text-books on genito-urinary surgery, emphasizing the injunction that rest in bed is an important adjunct to successful local treatment of any existing cystitis. He lays stress upon the after treatment, contending that this should be

carefully conducted with the object of preventing a recurrence of a calculus, either primary or secondary, and advises, as a precautionary measure against the formation of the latter, local treatment of the bladder if cystitis is present, and later on, after the irritation from the operation has subsided, the introduction of the suction pumping evacuating tubes to remove any fragment that may have been left behind.

Bottini Operation for the Radical Relief of Prostatic Obstruction.

L. Bolten Bangs (*Medical Record*, March 9, 1901,) expresses the opinion that enlargement of the prostate is not a senile condition; that while its effects may not show themselves till mid-life or later, it really begins in early life. He thinks that the premonitory symptoms of this malady, to which so little attention is paid by the patients, should be notes of warning to him to seek early advice, for if radical measures are necessary, the earlier this is known the better it will be for the patient. Regardful of the fact that surgical interference with the prostate is a serious matter at all times, and especially after the pathological changes due to hypertrophy have taken place, he has been conservative in his treatment of prostatic cases, operating only on those cases that imperatively required it. After three years' experience with the improved Bottini operation, he reports the results obtained in thirty-six cases. He is convinced from his experience in these cases, that while the operation is a serious one we have in it the means by which the sufferings of prostatics may be ameliorated—in some cases even cured—without submitting them to the graver dangers of prostatectomy. He says that the operation requires skill for its successful performance; that the patient should be as carefully prepared for it as for any other serious operation; and that in the majority of cases the operation should be performed under general anesthesia, as it is best done slowly, thus lessening the chance of secondary hemorrhage. Of the thirty-six cases there were four deaths, two of which were directly attributable to the operation. Sixty per cent of the cases are reported as cured, twenty per cent as very much improved, and twenty per cent as not benefitted.

BURNETT.

MEDICINE AND THERAPEUTICS.

The Relation of the Form of Tubercle Bacilli to the Clinical Aspects of Tuberculosis.

After studying the sputum of more than seventy patients with this object in view, Dr. Sewell, of Denver, (*Medical News*, March 16, 1901) concludes that the form of the bacilli found has a definite relation to the virulence of the disease. The short, deeply staining rod or chain of rods of moderate length is the usual form in many active cases. The long rods, particularly if irregularly broken, denote a milder process; while a long, slender rod, ill-staining or staining irregularly, is found in cases apparently passing on to a cure.

Sputa of the same patient examined at different times seemed to vary in their bacillary character according to the state of the patient.

The Medical Treatment of Peptic Ulcer.

Frederick C. Shattuck (*Journ. Am. Med. Ass'n*, April 13, 1901) recommends that the stomach be given complete rest for a period of about two weeks. Nutrient enemata of about six ounces of milk or of milk and egg being given every six hours, and a large cleansing enema daily.

For thirst he sometimes allows a small quantity of water by the mouth. In other cases it is given by enema, or under the skin.

In most cases discomfort ceases as soon as the stomach ceases to work, and there is usually no great sense of hunger. But if either is troublesome he administers small doses— $\frac{1}{32}$ to $\frac{1}{16}$ grain of morphia once or oftener during the day.

Treatment of Pneumonia.

H. Passler (*Munch. Med. Wochen.*, February 19-26, 1901) thinks that cold to the chest, as well as counter-irritation and cupping, has some influence toward limiting the extension of the inflammation, and by relieving pain render the respiration more effective. High temperature and a clouded sensorium are indications for lukewarm or cold baths. The surest relief for an overfilled right heart is venesection.

Alcoholics require a certain amount of alcoholic stimulation, and with them bromides and opium are preferable to choral as a hypnotic.

Cardiac insufficiency and sepsis are to be met by the free use of digitalis, strychnia and caffein.

Treatment of Diabetes Mellitus.

James Tyson, of Philadelphia, (*Philadelphia Medical Journal*, April 13, 1901) says that while availing ourselves of dietetic treatment for its important palliative effect, we should also seek remedies which will increase the oxidation of the glucose thrown into the blood from the liver, the most important of which he considers to be iron and arsenic. The latter should be given only in small doses, not exceeding 3 drops of Fowlers' solution or $\frac{1}{100}$ grain of arsenious acid three times a day.

Exercise and massage are beneficial in the same way, *i. e.*, by increasing oxidation.

The Cinnamic Treatment of Tuberculosis.

Julius Pollak (*Wiener Klinische Wochenschrift*, February 28, 1901) has treated sixty-four cases of tuberculosis in various stages, from slight involvement of one apex to large cavities in both lungs, by the method of Landerer—intravenous injection of cinnamate of soda.

He concludes that this drug, while not a specific, is a valuable adjunct in the treatment of the pulmonary form. On the complication of tuberculosis of the skin he observed no effect. In many of the cases the course of the disease seemed favorably modified. In some the injection seemed to have a direct antipyretic effect, and in some cough diminished and expectoration was rendered easier. In many the general physical condition was improved.

No unpleasant symptoms occurred in consequence of the injections.

Of the cases treated, 66.7 per cent were materially improved, 20.8 per cent improved, 10.4 per cent not benefitted, and 2.1 per cent died.

Of the first mentioned class, 12.5 per cent appeared entirely recovered.

The Toxic Effect of Alcohol.

Prof. Wagner V. Jauregg (*Wiener Klin. Wochens.*, April 11, 1901) states that for practical purposes we may call alcohol a nerve poison, but when we come to investigate its action by scientific methods, we find certain interesting problems that have not been satisfactorily solved; as, for instance, in acute alcoholism are the phenomena observed due solely to the action of the alcohol on the nerve tissue, or

also partly to the vascular dilatation that accompanies it. And which of these effects takes precedence?

We must also consider the results of alterations in the blood, which, at any rate in chronic alcoholism, are of importance.

Alcoholic delirium, on superficial observation merely poisoning by alcohol, becomes on reflection a more complicated problem. Certain individuals are more easily affected than others. It is the result, not of one debauch, but usually of several weeks dissipation. It is not directly a result of alcoholic poisoning, for it may be induced by the withdrawal of alcohol. Similar phenomena are the morning tremor and nausea, which are relieved by alcohol.

It would seem therefore that these symptoms are produced by certain toxins, generated no doubt by the action of alcohol on the blood and tissues, but to whose effects alcohol again acts as an antidote.

Further, alcoholic delirium presents symptoms and pursues a course resembling intoxication by certain bacterial toxins. In severe cases it is accompanied by fever, and often terminates by crisis.

An albuminuria similar to the febrile form occurs, and Dr. Eltzholtz has observed blood changes similar to those occurring in certain infectious diseases.

We must not overlook the probability of auto-infection from the gastro-intestinal canal, nor the fact that the liver, one of whose functions is to neutralize toxins, is also disturbed by the action of alcohol.

HÖGE.

NEUROLOGY.

A Remarkable Case of Insomnia and Its Treatment.

John A. Beebe reports (*Journal of Mental and Nervous Diseases*, June, 1900,) the administration of heroic doses of trianol, after other hypnotics had utterly failed, to a case of delirium tremens, complicated with profound nicotine poisoning.

Restlessness had been extreme; two strong men were constantly required for restraint, and exhaustion became profound. Five grains of trianol were given every hour; later 15 grains every four hours; this produced only slight effect, and thirty-six hours passed without sleep; 117 grains were given in the next twenty-four hours; hot packs

and manual restraint were used; twenty hours' sleep ensued; recovery occurred. Beebe concludes that trianol is conservative in even very large doses, if proper attention be paid to nutrition and elimination.

Tabes Dorsalis.

Allen Blair Bonar (*Journal of Mental and Nervous Diseases*, May, 1901,) reports studies of 286 cases of tabes in Prof. Starr's clinic; 84.6 per cent were males, 15.38 per cent females. His table showing frequency of certain symptoms is of great interest:

	PER CENT.
Loss of knee-jerks.....	95.02
Changes in knee jerks.....	3.69
Romberg symptoms.....	79.02
Change in papillary reaction.....	78.67
Pains in the legs.....	78.67
Ataxia in the legs.....	70.62
Vesical disturbance.....	62.23
Paresthesia and numbness.....	54.54
Girdle sensation.....	48.06
Loss of muscular sense.....	28.32
Crisis.....	16.78
Pains in trunk.....	12.93
Optic nerve atrophy.....	8.74
Ataxia in arms.....	7.69
Pains in arms.....	6.99
Loss or diminution of sexual instinct.....	6.00
Pains in thighs.....	4.89
Ocular palsies (strabismus, diploopia, etc.).....	3.21
Nystagmus.....	2.44
Arthropathies.....	2.09
Constriction around legs or thighs.....	1.74
Tremors.....	1.74
Perforating ulcers of foot.....	1.39
Muscular atrophy.....	1.39
Anosmia.....	1.04
Deafness.....	0.69
Vertigo.....	0.34
Loss of taste.....	0.34

Syphilis was well authenticated in 58 per cent, in 11 per cent probable, absolutely denied in 30.77 per cent.

The Toxic Origin of Neurasthenia and Melancholia.

M. Allen Starr (*New York Medical Record*, May 11, 1901,) describes the form of neurasthenia which often proceeds to mild melancholia, and which has as its prominent symptoms headache, dull pressure in the head and back of the neck, sensations of fullness in the head, with inability to concentrate the attention, irritability of temper, irregularities of the circulation, general disorders of digestion, with infrequent and very offensive stools; the urine varies in amount and specific gravity, frequently containing large quantities of indican. Starr does not define the toxic agent, and compares the indican to the slag found in the ash pan of a furnace

In treatment, he recommends meat, fish, oysters, rice, macaroni and hominy, but says milk and eggs, potatoes, turnips, beets and tomatoes do not as a rule agree; tea almost uniformly disagrees; coffee as a rule is a grateful stimulant, but may disagree; alcohol in all forms should be excluded; water should be taken freely.

Digestion is aided by $\frac{1}{10}$ grain doses of calomel each hour until a grain is taken, repeated every ten days, and $\frac{1}{4}$ grain podophyllin every ten days, alternating with the calomel; also Carlsbad salts, and a powder composed of:

R \bar{y} Salicylate of sodium gr. x
 Phosphate of sodium $\mathfrak{z}\text{j}$
 Chloride of sodium $\mathfrak{z}\text{ss}$

M. Sig.—This powder in the morning.

The toxic agent may be counteracted, first, by sodium sulphocarbolate, grain v, with permanganate of potassium, grain j, in a shellac capsule, insoluble in the stomach but dissolves in the intestine; second, by salol, grain v, with castor oil, minim x, in same kind of capsule; third, by benzoate of sodium, grain ij, sulphocarbolate of zinc, grain j, with beta naphthol, grain j.

A hot bath on rising with a very brief cool sponging gives much comfort, but cold baths are not well borne.

An increased amount of exercise should be insisted upon, but care advised as to moderation.

A complete rest with absolute relaxation should be insisted upon for a half hour after each meal.

A pleasant occupation out of doors aids recovery.

BLISS.

OBSTETRICS AND GYNECOLOGY.

The Age of First Menstruation in the United States.

The period of pubertal development is an important epoch in girl life, as the crest of one of the three great waves of functional activity, during which susceptibility to morbid influences is at its highest; much of woman's functional irregularity and suffering is due to neglect at this time, hence, the pubertal period claims the attention of the physician as a promising field for preventive gynecology.

To the physiologist and ethnologist the age of first menstruation in the United States, but little studied as yet, is of interest, as the extent of territory, with its variety of climate and the many races represented, offers exceptional advantages for the solution of still open problems as to the causes which influence pubertal development, which hasten or retard the appearance of the menstrual flow.

Dr. George J. Engelmann, of Boston, Mass., who has made over 10,000 observations as to the time of first menstruation of American-born women, many with reference to points never before investigated, here or elsewhere, gives ample material for an authoritative solution of the questions involved. His observations, from his own practice and from that of others, are many, and the identity of results obtained in far distant points—Montreal and New Orleans, St. Louis and Boston—vouches for their correctness, furthermore they are corroborated by all previous records, a total of 6,000 in such points as these may cover.

The mean age of first menstruation in this country is 13.9 or 14 years, the same in the United States and in Canada. Climatic differences in no wise influence pubertal development within the bounds of the North American continent; the American-born, be they of American (14.1), German (14.5), Irish (14.5), or French (13.6) parentage, of the same class, attain puberty at the same age in Montreal, St. Louis or Boston; the Negro does not vary (14.05) whether in New Orleans or St. Louis. The greatest variation caused by the extremes

of all influences is one year, from 13.5 in the girl of highest refinement and education to 14.5, which is the period for the American born of the laboring classes, of German and Irish parentage; in other countries the difference between the extremes of social classes is from 2 to 3 years.

Refinement, education, city life, nerve stimulation, determine precocious puberty; ignorance, poverty and manual labor retard; social status in itself means very little; heredity and race have a slight determining influence.

The American-born are more precocious than the women of other countries in the same zone; 14 is the age of puberty in the United States and Canada, 15.5 in the temperate zone of Europe. The native American is more precocious than the American-born of foreign parents, but the latter closely approximates the American of American parentage, even in the first generation.

Racial characteristics fade rapidly away; the age of puberty in Germany is 15.5 to 16, in Ireland 15.3, and for the girl born in America of German or Irish parentage 14.5, in St. Louis as it is in Montreal; the Canadian-French are the only exception, between 14 and 15 in their native land, these alone of all races are more precocious than the American of the same class when born in this country, 13.7 is the mean age; climate here has absolutely no influence; race very little; mentality, surroundings, education and nerve stimulation stand out prominently in this country as the factors which determine precocity.

DUDLEY.

PEDIATRICS.

Two Cases of Purpura Fulminans.

Vass and Borgen (*Norsk Magazine; N. Y. Medical Record*, May 18, 1891) each report a fatal case of purpura. The first was a girl, aged 5 years, who had been ill for five weeks, began to complain of pain in various parts of the body, which were considered rheumatic. For the first few days she had been up, but for two or three days had been confined to the bed, complaining unceasingly of pains. She was well nourished but pale. Each of the lower extremities presented a spot the size of the palm of the hand, purple in color, and there were also smaller spots, with a parchment-like feel and sur-

rounded with a red circle about one line in width. Similar spots appeared on the soles of the feet. No albuminuria was present. The child died.

The second case was in an infant, aged 2 years, who was suddenly taken ill and covered with ecchymoses; it died in two days. At the autopsy the glands in various parts of the body were found to be enlarged. Virulent streptococci were found in the blood and in various organs.

Staphylococcic Enteritis in Breast-Fed Infants.

Moro (*Yahrb. f. Kinderk.*, Vol. II, 1900) studied the stools of breast-fed infants affected with intestinal disturbances, and in a large number of these he found staphylococci. The disease begins as an intestinal catarrh, the stomach not being implicated. The stools are serous and acid in reaction. Vomiting and loss of weight rarely occurs.

Concerning Pertussis.

Berti (*Pediatrics*, April 15, 1901) reviews an article written by Rondinini. He speaks of attack of spasmodic dyspnea which occur in children affected with pertussis and come on at irregular intervals, particularly at night. Berti holds that these attacks have been described by Monssons and West,

It is true that in pertussis there are frequently attacks of dyspnea, which appear without apparent cause and recur at irregular intervals. They seem to be independent of the paroxysms of cough and consists of a series of rapid respirations. These attacks are especially frequent during the acme of the disease but may persist after the other symptoms have disappeared. They must not be confounded with the habitual dyspnea, which is present in many cases of pertussis. Their occurrence is not limited to pertussis, but may be the result of the general intoxication.

The treatment of pertussis by vaccination can not be applied to all cases. So many children are already vaccinated. He is not an enthusiast on this method of treatment. He reminds us that Lichtenstein, in 1841, tried to prove that vesication by tartar emetic was as efficient as vaccination.

Inoculations of serum from heifers immunized against small-pox have been tried. According to Violi these inoculations resulted in a

diminution in the number and severity or in disappearance of the paroxysms of cough in from eight to ten hours after the injection. This method deserves further trial.

ZAHORSKY.

SURGERY.

Present Status of the Treatment of Prostatic Hypertrophy in the United States.

Guiteras (*New York Medical Journal*, December 8, 1900) states that such treatment must be divided into the symptomatic and the operative. There are two principal operations, that of Bottini and prostatectomy. In the choice of an operation one must be guided by the age of the patient, the size of his prostate and the condition of his kidneys. The author next gives the technique of the two operative procedures just mentioned. In prostatectomy an enlarged middle lobe is best removed by the suprapubic route, lateral lobes, however, are more easily taken out through the perineum.

Radical Cure of Inguinal Hernia.

A. M. Phelps (*New York Medical Record*, February 2, 1901,) contributes an article which, for its length, contains much truly worth reading. First he considers the operative treatment of this malady from the very earliest time; at the same time he gives us in illustration an idea of the first anatomical studies on the subject, as well as a good conception of the instruments which were first used in its treatment. He compares the results which have been gained through the use of all the methods invented down to the time of Bassini and Halstead; concluding with the statement that no operation has been fully satisfactory. Hence the warm recommendation of his own method, which has not been attended with a single recurrence in hundreds of cases.

Phelps lifts the cord out of the canal, puts in three rows of continuous silver wire suture (peritoneum, internal oblique and external oblique), and buries over the transversalis fascia, a filagree of fine silver wire.

BARTLETT.

BOOK REVIEWS.

A System of Physiologic Therapeutics, A Practical Exposition of the Methods, other than Drug-giving, useful in the Treatment of the Sick and in the Prevention of Disease. By American, English, French and German Authors, and Edited by SOLOMON SOLIS COHEN, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College. In Eleven Handsome Octavo Volumes, with many Illustrations, Maps and Full-page Plates. Price for Complete Set, Cloth Binding, \$22 00. [P. Blakiston's Son & Co., Philadelphia.]

In their announcement the publishers state that the term "Physiologic Therapeutics" comprises that great variety of remedial measures, other than the use of drugs, by which the natural or physiologic powers of the human body may be stimulated, controlled or supplemented in the fight against disease. Since we have so many textbooks and treatises on therapeutics which give all, or at least the principle part, of their pages to the use of drugs in the cure of disease, this system will be very welcome to every conscientious and scientific physician. For as the editor has well said, "we must recognize that recovery and disease are alike vital processes in which the organism itself is the most active agent, and that neither morbid nor therapeutic influences endow the organism with new attributes or introduce into its operation new powers, but we must also keep in mind that disease and recovery are often, is not always, one continuous process." And since natural recuperative power is the result of development under the stimulus of physical, chemical and psychic agencies it follows that external influences can be used in modifying their power.

Dr. Cohen lays down the following principle as the foundation of treatment: "All successful treatment depends upon the evocation, stimulation and control of the recuperative reactions, together with the suppression, diminution or neutralization of antagonistic reactions likewise occurring automatically as the result of extraneous morbid influences or of internal failures or disturbances"

He wishes it to be distinctly understood that he is not opposed to the drug treatment, but a clearer knowledge of the therapeutic ap-

plication of natural agencies will lead to a more restricted use of artificial means.

The following are the subjects included in this treatise :

1. Electrotherapy, two volumes.
2. Climatology and Health Resorts, including Mineral Springs, two volumes.
2. Prophylaxis—Personal Hygiene, Nursing and Care of the Sick.
4. Dietotherapy.
5. Mechanotherapy.
6. Rest—Mental Therapeutics—Suggestion.
7. Hydrotherapy—Thermotherapy—Phototherapy, Balneology.
8. Pneumatotherapy and Inhalation Methods.
9. Serotherapy—Organotherapy — Blood-letting, etc.—Principles of Therapeutics—Indices and Digest.

Each of these subjects are treated by masters in the art. We are expecting great things from this work.

VOLUME I.—Electrotherapy. By GEORGE W. JACOBY, M.D., Consulting Neurologist to the German Hospital, New York City, etc. In two books, with 163 Illustrations. Book 1 treats of Electrophysics; Book 2 Describes the Apparatus Required for the Therapeutic and Diagnostic use of Electricity.

We have nothing but praise for this volume; the subject is treated in a very clear and practical manner, and the physician will have no difficulty in reaching a clear knowledge of electrophysics when studying this book.

VOLUME II.—Electrotherapy. By GEORGE W. JACOBY, M.D. Including special articles on Electricity in Diseases of the Eye, by Edward Jackson, A.M., M.D., Denver; in Diseases of the Throat, Nose and Ear, by William Scheppegegrell, M.D., New Orleans; in General Surgery, by J. Chalmers Da Costa, M.D., Philadelphia; in Gynecology, by F. H. Martin, M.D., Chicago; in Diseases of the Skin, by A. H. Ohmann-Dumesnil, M.D., St. Louis.

Dr. Jacoby very thoroughly treats the general subject of electrotherapy. The first chapter studies the physical compartment of the electric current in the human body. Chapters 2 and 3 give the electrophysiology and electropathology of the motor nerves and muscles. The electrophysiology and electropathology of the sensory nerves and

reflex contractions, the nerves of special sense, and vasomotor and secretory nerves follow in two chapters. The effect of electricity on the brain is given in a brief article. A chapter is devoted to the physiologic action of sinusoidal and high frequency currents.

We can speak in the highest praise of the chapters on electrodiagnosis and electropagnosis. Every practicing physician should be familiar with these principles. Under the therapeutic action of the current, five principle actions are given: (1) The exciting action, (2) the electrotonic action, (3) the chemical and electrolytic effect, (4) the cataphoric action, and (5) the psychic or suggestive action.

Full directions are given as to the methods of application, and the rules governing its use in various pathologic conditions will be found clear and comprehensive.

An addenda contains interesting articles on electrolysis, cataphoresis, X-ray therapy, surgical uses of electricity, electricity in diseases of the eye, ear, nose and throat, electricity in gynecology, and in skin diseases.

A chapter is appended to book II on Roentgen Rays.

We are well pleased with the first two volumes, and do not see how the subject of electrotherapeutics could have been made more scientific, up-to-date and yet practical than this work has made it.

The printing and binding of the book is very handsome.

ZAHORSKY.

Annual and Analytical Cyclopedia of Practical Medicine. By CHAS. E. DE M. SAJOUS, M.D., and One Hundred Associate Editors; Assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromolithographs, Engravings and Maps. Vol. III. [The F. A. Davis Co., Philadelphia, New York and Chicago.

The preceding volumes have already been noticed, and it gives us great pleasure to repeat the unqualified commendation therein given. This third volume is the equal of the others. We know of no work so useful to the general practitioner, and so comprehensive in gathering in all that has been written in a fair and unbiased way. Two often cyclopedias are merely a system of monographs, setting forth the views of individual writers, useful certainly, but very different from this. Here we have the literature from every worthy source condensed by competent editors, arranged chronologically, and presented so

plainly and concisely that the reader has the whole subject before him in an easy retrospect.

Quain's Dictionary was for a long time a necessity in the working library. This is of the same nature, but fuller and a worthy successor to that time-honored volume. The profession has shown great appreciation of the first two volumes of the Cyclopedia, and this will not be lessened when the third volume is received. Some of the articles are of exceeding merit, viz.: Cretinism, by Prof. Osler; Exophthalmic Goitre, by Prof. Putnam; Endometritis, by Prof. Byford, and many others. In fact, the whole volume is a mine of wealth, rather gold that has come from the severest crucible. The articles by Sayre, Stelwagon, and Stimson are worth the whole cost of the book. If there is one compendium which the busy practitioner can not do without, it is Sajous' Cyclopedia.

W. P.

Introduction to the Study of Medicine. By G. H. ROGER, Professor Extraordinary in the Faculty of Medicine of Paris, Member of the Biological Society, Physician to the Hospital of Porto d'Aubervilliers; Authorized Translation by M. S. GABRIEL, M.D., with additions by the Author. [D. Appleton & Co., New York.

This book impresses one as bearing a modest title when its pages, exceeding 530 in number, have been scanned carefully. Prof. Roger was asked by the Faculty of Paris in '97 and '98 to deliver a course of lectures to show students the object and extent of medicine and how to study it. The lectures are here reproduced with some additions.

No practitioner could fail to derive much satisfaction from reading it, for it brings into rapid view the main features of the very broad field which is his constant abiding place, and enables him to grasp a comprehensive idea of the relationship of its various parts. We are prone to cultivate a very small section of our chosen domain, and it is well for us to see the whole expanse occasionally that we may work in harmony.

For students we would especially commend Prof. Roger's lectures on inflammation and on examination of the sick, but the entire book, read carefully, will give a clear conception of what it means to take up the study of medicine—its extent, its difficulties and obscurities. So few men have any idea of these, even after fairly entering the work of preparation, possibly they will be appalled by Prof. Rogers. If so it is for the best, for the faint-hearted should remain outside.

An excellent index replaces the glossary of the French text in this translation. The book is in Appleton's first-class style, a pleasure to read and to handle.

BLISS.

A Compend of Human Physiology, Especially Adapted for the Use of Medical Students. By ALBERT P. BRUBAKER, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College, etc., Tenth Edition, Revised and Enlarged. Price, 80 cents. [P. Blakiston's Son & Co., Philadelphia. 1900.

This is certainly a most valuable quiz-compend for students; it has gone through nine editions, and it contains all the essentials of modern physiology in a brief and clear language and should be in the hands of every student who is expecting to pass an examination.

Merck's 1901 Manual of the Materia Medica. A ready reference pocket-book for the practicing physician and surgeon, containing names and chief synonyms, physical form and appearance, solubilities, percentage strengths and physiological effects, therapeutic uses, modes of administration and application, regular and maximum dosage, incompatibles, antidotes, precautionary measures, etc., of the chemicals and drugs usual in modern medical practice; a comprehensive collection of the prescriptions, embracing also the newer remedies of established merit; a classification of medicaments, and miscellany, comprising poisoning and its treatment, metric system and tables, etc. Compiled from the most recent authoritative sources, and published by Merck & Co., New York and Chicago.

This is a very useful little book and serves a good purpose in detailing briefly the use of the best newer remedies.

Thirty-five Hundred Questions on Medical Subjects, Arranged for Self-examination, with the proper references to standard works in which the correct replies will be found. Third Edition, Enlarged, with questions of the State Examining Boards of New York, Pennsylvania and Illinois. Price 10 cents. [P. Blakiston's Son & Co., Philadelphia. 1901.

To a student who has no comrade to quiz him, a book like this is very useful.

NOTES AND ITEMS.

Dr. Gratz A. Moses.—Dr. Gratz A. Moses, one of the oldest and best known physicians of St. Louis, died at his residence in this city, Sunday, July 7, 1901, at the age of 71 years. For many years Dr. Moses was one of the most prominent practitioners of St. Louis, but his increasing age and the impairment of his bodily health necessitated a retirement a few years since from the burdens and obligations of active service. He was one of the founders of the *COURIER*, and during his lifetime one of its warmest friends and earnest supporters.

Dr. Moses was born in 1839, at Bordentown, New Jersey, and was brought by his parents to St. Louis in 1841. He was graduated from the St. Louis Medical College and in the Civil War served as a surgeon in the Confederate Army. After his return to St. Louis he married Miss Anderson, of Mobile, Alabama. He was a professor at different times in both the St. Louis Medical College and the Missouri Medical College.

Dr. Edwin S. Lemoine.—After an illness of two weeks, Dr. Edwin S. Lemoine died at his residence in this city July 17, 1901, at the age of 74 years. The death of Dr. Lemoine adds one more to the unusual number of the old and honored practitioners of St. Louis, who within the past few months have been called upon to lay down the burden of their Earthly labors and to cross over the river and rest under the shade of the trees. His cheering smile and sympathetic countenance which always brought sunshine in their train will be missed by the multitude of his friends and patients to whom he had become endeared during a long life of busy practice. His love for the profession which he had followed for fifty-one years impelled him to devote himself actively to its demands until two weeks before his death. And though the trials of this life appeared to rest lightly upon him, there now will come a surcease of sorrow in the enjoyment of the inheritance that is a promise to the good and faithful servant.

Dr. Lemoine was a native of the Old Dominion State, of French-Huguenot descent. He graduated from the Medical Department of

the University of Pennsylvania in 1849, and his entire professional life was spent in this city. He was an ex President of the St. Louis Obstetrical and Gynecological Society and at one time Secretary of the American Medical Association and an active promotor of its interests. He died in full years and honors.

Dr. M. H. Post appointed a Member of the Managing Board of the Missouri School for the Blind.—Governor Dockery, on June 17, 1901, appointed Dr. M. H. Post, of St. Louis, a member of the Board of Managers of the Missouri School for the Blind. No better selection for the place could have been made. Dr. Post is a gentleman and an excellent physician, one who stands at the top in his chosen department. He was a member of the Board during the administrations of Governors Francis and Stone, and is fully conversant with the duties of the position. The appointee of Governor Stephens to this position was a blatant quack of the purest ray serene, one who extolled his great medical qualifications in the daily prints, and who used the position for the furtherance of his personal interests to the greatest possible extent. A picture of this shining medical light appeared in the local lay press of April 14, 1901, in connection with an advertisement which stated that Governor Dockery had appointed this "eminent (?) eye specialist, oculist in charge of the State Blind School." Whether he was appointed by the Governor or merely permitted to hold over is not known, at any rate his tenure of office was brief, and after a few weeks he resigned—by request.

The Fall of a Boom-Town Angel.—Since Uncle Sam was so inconsiderate as to cut off the privileges of the mail to "Professor" Weltmer and his abettor, one Kelley, of magnetic healing notoriety, the post office at Nevada, Mo., has lapsed from the dignity of a second class office, which it enjoyed during the palmy days of the magnetic professor, to that of one of the fourth-class, such as it was ere the "perfesser" hoboed into town. To add insult to injury, Uncle Sam returned to those, hungry for magnetism, the coin of the realm (found in mail) which the professor was trying to separate them from, and indicted this, the most famous or infamous citizen of Nevada, Mo., and his *fides achates*, Kelley, for using the mails for fraudulent purposes, finding nine counts against each and for which each was convicted.

When Reuben came to town the goose hung high, magnetism was on tap, everybody had it at Nevada, Mo., except a few medical immunes, and this elixir of life was dealt out to all present, and to many absent, at so much per—no pay no cure; those who could not come could send; but under the withering glance of the Government a drought has fallen upon this one time fertile field, and the “magnetic” market has slumped—at Nevada, Mo.

Rudolf Virchow Fund. — On October 13, 1901, Rudolf Virchow will be eighty years old. When he completed his seventieth year, a fund was started in his honor to enable the great master to facilitate scientific research by establishing scholarships, and by encouraging special medical and biological studies. Contributions to that Rudolf Virchow Fund were furnished by those in all countries interested in progressive medicine, as a homage to the man whose name is always certain to arouse admiration and enthusiasm.

In Berlin a large committee, containing amongst others the names of A. Bastian, V. Coler, A. Entenburg, B. Fraenkel, O. Israel, Fr. Koenig, C. Posner and W. Waldeyer, has been formed, to call for contributions, which are to be added to the original Rudolf Virchow Fund so as to increase its efficiency. The Committee expresses the opinion that in no better way, and in none more agreeable to the great leader of modern medicine, can his eightieth birthday be celebrated, and ask for the sympathy and co-operation of all those engaged in the study and practice of scientific medicine all over the globe.

The undersigned have formed a sub-committee for the purpose of making the American profession acquainted with the intentions of the Berlin Committee, and urge their colleagues to participate in honoring the very man who has done more, these fifty years than any other to make medicine a science, and international.

Subscriptions should be sent to their Secretary, who will receipt therefor.

Charles A. L. Reed, President of the American Medical Association.

Henry P. Bowditch, President of the Congress of American Physicians and Surgeons.

William K. Welch, Johns-Hopkins University.

Robert F. Weir, President of the New York Academy of Medicine.

A. Jacobi, 110 West 34th Street, New York, Secretary.

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ORIGINAL CONTRIBUTIONS.

Congenital Dislocation of the Hip.

By E. H. BRADFORD, M D.,

BOSTON, MASS.

Presented at the Fifteenth Annual Meeting of the American Orthopedic Association, Niagara Falls, June 11-13, 1901.

THE progress of surgery may be noted by recording the successive problems presented each year for solution.

A decade ago there was much discussion as to the possibility of curing congenital dislocation of the hip. Now that the possibility of a cure is established the question demanding an answer is as to which of two methods recommended gives the greatest percentage of success.

It may be regarded as established that the chief obstacle to permanent reduction of a congenitally dislocated hip lies in the soft parts and, especially, in the capsule, which is characteristically altered. Where the capsule is not so altered that the femur can be passed through the narrowed portion of the capsule near the acetabulum, reduction can take place without incision. Where this portion of the capsule is smaller than the head, and with resistant firmness covers the acetabulum already filled with vestiges of the capsule and fibrous tissue, an incision is necessary for complete immediate reduction.

Permanency of the cure depends upon several conditions, namely: That the head be well placed in the acetabulum;

that the acetabulum be sufficiently deep to hold the head; that no fold of the capsule interpose between the head and the bottom of the acetabulum; that no contracted band of the capsule remain, causing a dislocation if the limb be adducted or extended; that the head be placed in its normal position and kept there sufficiently long for the capsule to be firmly contracted about it, with the re-established muscular tonicity holding the head well in place.

Failures and relapses will be found to be due to a neglect of the above-mentioned essentials, and the frequent occurrence of these difficulties, and the best methods of determining and overcoming them are subjects needing further investigation before the operation becomes of easy performance.

The treatment of congenital dislocation of the hip has received a great deal of attention of late, and at the International Medical Congress in Paris a special discussion was devoted to the consideration of this subject.

Lorenz, who has done so much in the development of the so-called bloodless method, justly lays more stress on the importance of the after-treatment. It is especially important that after reduction the head should be held in, what he terms, the primary position, in order that the tissues may adjust themselves after the violence and trauma necessary to reduction. But it is also essential, after the bloodless reduction, that the limb be placed in such a position that the patient must walk in such a way as to exert pressure of the of the head of femur upon the acetabulum without the possibility of its slipping from the desired position, enabling the acetabulum to shape itself under use. The first object should be to give the anterior fibrous wall of the capsule a chance to gain in strength and prevent relaxation backward. The secondary position, which avoids hyperextension, is given when the danger of relaxation backward is past, but while it is necessary to shape the acetabulum by use, and in that way prevent a slipping forward of the head. Under these conditions the limb is not kept hyperextended and turned outward but is slightly flexed and abducted.

Kirrmisson claims, and the claim is substantiated by X-ray photographs, that many cases of so-called bloodless reduction are in reality simply forward transposition of the head.

The so-called bloodless reduction is not devoid of danger. Fractures of the femoral neck, epiphyseal separation, fracture

of the pubes, gangrene of the thigh and temporary paralysis of the various sciatic branches have resulted, probably, from imperfect technique of the surgeon, which increasing experience will make uncommon.

According to Kirmisson's résumé of the cases recorded a year ago, of the 360 cases of bloodless reduction reported by Lorenz, failure occurred in 15, and of 135 cases recorded by radiograph, only 79 show anatomically satisfactory results.

Out of 54 cases of bloodless reduction in the hands of Hoffa, 42 were unilateral cases, of which 4 showed permanent reduction, all having been temporarily successful. In many others there was simply a transposition forward. In the bilateral cases there was no permanent reduction of both hips; in 4 cases permanent reduction on one side took place.

Peterson and Schede have come to the conclusion that the result to be anticipated is a transposition and a cure by amelioration. Hoffa has reported 248 cases of open operation with 10 deaths; none in the last 132. Of 17 unilateral cases treated with his latest methods, 9 cures and 8 transpositions result; and in 3 double cases, 1 cure and 2 transpositions.¹

Lorenz, in his own statement before the Paris International Congress of 1900, said that in one-half of the cases under his care for bloodless reduction, the anatomical results were poor, though the functional results were good. In other words an improved position was given the head of the femur. In the other half of the cases the results were satisfactory both anatomically and functionally. In double cases, however, perfect anatomical results are obtained in only a quarter of the cases on both sides. In three-quarters of the cases, relaxation has taken place on one or both sides, though in all there has been an improvement.

Hoffa reports that in his last 132 cases of reduction by incision, 82 were unilateral and 25 bilateral. In 35 of the 82 the ultimate results were ideal both anatomically and functionally. The patients were definitely cured. In 27 the result was not perfect; the position of the head was either not as complete as was to be desired or there was some limit of power of adduction. In no patient under 8 years of age has there been ankylosis, but in 6 older patients there has been ankylosis in good position.

¹Revue d'Orthopedic, 1900, page 289.

Out of 25 bilateral cases, Hoffa obtained 14 cures; in 4 the result was good on one side; in 3 an osteotomy was needed to improve the position of one side; in 2 cases operated upon in patients 2 years of age, relaxation took place; in no case did bilateral ankylosis take place.¹

From the facts accumulated by recorded experience, it may be seen that a small number of cases of unilateral congenital dislocation of the hip can be permanently cured by the bloodless method through the exercise of ordinary skill; that not more than a half can be cured even by the exercise of exceptional skill; that the percentage of cures is less in bilateral cases, but that some improvement in gait can be expected in all cases. It is also shown that by the operative reduction with incision, three-fourths of the unilateral cases of congenital dislocation can be cured at the ages between 3 and 8 years, and one-half of the bilateral cases, if treated with the best skill. That in children of these ages, stiffness is not to be expected unless suppuration follows, a complication which can be prevented by the exercise of care.

The technique of both the bloodless reduction and the reduction by incision has been determined. Neither operation is severe; both require skill and experience. Reduction by incision requires more than bloodless reduction.

Certain questions need now to be answered to make operative interference more definite in its promise of ultimate success. Is it possible to determine whether a fold of the capsule remains between the head (partially reduced by the bloodless method) and the floor of the acetabulum? Is it possible to determine, without incision, the comparative sizes of the opening of the capsule at the mouth of the acetabulum and the head of the femur?

When the head of the femur is reduced into the acetabulum by incision is it always necessary, in order to prevent relaxation, to deepen the acetabulum? This is claimed by Hoffa and not regarded as necessary by Lorenz. Is the prolonged after-treatment, regarded as necessary by Lorenz, essential? Can measures be satisfactorily employed which will shrink the capsule about the neck of the reduced head, and thereby hold the head in the acetabulum as the cotyloid ligament does in a

¹Transactions XIII International Medical Congress, Paris, 1900, Section Chirurgie de l'enfance.

normal hip? In how many cases is the distortion of the neck so severe as to need osteotomy for perfect cure?

What is the best method of after-treatment, and how long is it necessary to continue it?

These questions can only be answered by the careful investigation of the results of all cases treated.

A group of 16 cases operated upon since January, 1899, at the Boston Childrens' Hospital, including a few still under after-treatment, are illustrative. In all the operative method by manipulative reduction was successfully employed; in all but one (a bilateral one still under treatment) incision was afterwards performed in the attempt to give greater firmness. The cases range from an age of thirteen to one and a half years, the extremes being beyond the limits of age when treatment should be, by choice, attempted. In none of these was the operative interference attended by danger or serious inconvenience. In one only, that of a child operated upon shortly after an attack of measles, suppuration followed, instead of healing by first intention; but complete healing without sinus followed in a few weeks in the suppuration case. In all others, healing by first intention followed.

In a girl, 13 years of age, it was found necessary to shape the head of the femur by the removal of a portion of cartilage in order to place it well in the acetabulum. This was also done in one of the early cases, and did not cause stiffness or limitation of motion at the hip; but it necessarily caused slight shortening.

Curettage of the acetabulum was performed in only one case, that of a girl, 13 years of age, though in two or three of the smaller children it is a question whether this might not have been advantageous. Where this was done, the instrument devised by Doyen for the purpose proved of great efficiency. In all but two instances the capsular constriction over the entrance of the acetabulum (the acetabular hymen) was considerably smaller than the head; in some instances, much smaller. In all cases the capsule was abnormally thick. In one case where the head was found to have been passed through the capsular neck by manipulation, a cutting operation subsequently performed appeared to have been unnecessary.

In two of the youngest children (two years and one and a half years) beginning to walk, the shape of the acetabulum

was markedly unformed and gave difficulty in securing the head in place, necessitating especial care in after-treatment.

Three cases were operated upon between January and December, 1899, and of these, from actual examination and correspondence, it appears that the correction has remained permanent at the present time and that both anatomically and functionally a permanent cure has been established. In a fourth case operated upon at the same time a portion of a misshapen head was removed at the operation and some shortening resulting. The result is not perfect as the hip is not as strong as the other and a limp persists; the motion is normal and the functional activity all that can be desired.

The cases were all single. In one an osteotomy was performed to overcome the twist of the neck of the femur. X-ray photographs were taken three months after the operation but none later.

The remaining 8 operated upon since January, 1901, may be regarded as still under after-treatment, and the ultimate result is still undetermined.

In all the hip was reduced first without incision and then the hip was incised to secure the head firmly in the acetabulum. In one, as has been mentioned, perhaps operated upon too soon after an attack of measles, suppuration followed and for a few weeks a transposition of the head instead of complete reduction took place. Some stiffness at present exists; the wound has healed perfectly and the functional use of the limb is satisfactory; there is not, however, an anatomical cure.

Two of the cases are bilateral and in one the reduction without incision was performed, and the hip appears to be secure; in the other reduction by incision was performed.

In one case, a child, 13 years of age, an alteration of the shape of the head was necessary. In the child of one and a half years—a bilateral case—difficulty was found in keeping the head in the acetabulum after reduction, and a longer after-treatment seems necessary, suggesting that beyond the age of 10 and under the age of 3 years, operative interference offers chances for improvement but not of the best results.

From January, 1900, to June, 1900, four cases were operated upon successfully. Of these the ultimate result is as far as known at present anatomically and functionally perfect, in one by actual examination; in two the present condition

is reported by letter to be perfect; in one, a bilateral case, the ultimate result is not known, but when last examined, six months after the operation, it appeared that one hip was not firm in the new socket.

The results here mentioned coincide with the conclusions of the observers, viz., that congenital dislocation of the hip is a curable affection; that the necessary operative procedures are not dangerous but require skill; that the percentage of permanent cures from the reduction without is not as great as that with incision; that careful after-treatment is necessary.

[133 NEWBURY STREET.]

A Study in Heredity.

By ALICE M. SMITH, M.D.,

TACOMA, WASH.

HEREDITY is a term commonly used to explain the existence of such qualities as are found in the parents.

It is universal in its manifestations, and all living things share its influence. True heredity is the transmission from the parent to the offspring of general and acquired traits. General traits are those evolved from remote ancestry and other etiological factors, such as environment, climate, inter-marriage, and anatomical and physiological abnormalities of the progenitors. Man's mental organization has been perfected by gradual development through untold generations and is the resultant of the hereditary culture transmitted by all his ancestors. The general law of heredity is the simple law of the reflex act. Thus, the muscle of a recently decapitated frog, for example, may be made to execute movements, if such stimuli as salt and pepper be applied to them. These movements are due to the organized force of habit which causes the muscles to respond to local irritation or stimuli, and this response is known as reflex action. Or touch the skin with your forefinger and no reflex will occur, but put the finger in your throat and you will cause violent gagging, coughing and vomiting. Hence, the simplest functions of man, such as breathing, sleeping, walking, are inherited or evolved, from

animals that existed before man, and are as fixed and unalterable as are the physical characteristics that separate him from the lower animals. Thus, the inherent structure of any cell determines its reactions to any given environment; and the mass of cells constituting any living organism has an individual and collective mental constitution that is as fixed in its reaction to its formative influences as are their histological structures. In other words, every cell in our bodies is so highly differentiated that each and every one performs its especial function and life's work with the same precision and response to its hereditary tendencies as does the individual. The cells act automatically in response to the stimulation of their nerve centers, and just so long as these centers are normal in their process of evolution, just so long will the action of the cells governed by them continue,—but, if these centers are modified or rendered abnormal in the progenitors, then the hereditary tendencies of the offspring will be to become abnormal.

Heredity is divided into two great classes of phenomena—general hereditary repetitions and individual hereditary variations.

General hereditary repetitions are characterized by two great sub-classes of phenomena that are transmitted to the offspring. In the one sub-class we have repetitions of the physical, mental or moral peculiarities of the immediate ancestors, especially those of the parents; for instance, children are frequently recognized by their close resemblance to one of their parents, and this resemblance may be so extreme as to be a perfect repetition of the gross and minute anatomical characteristics of that parent in form and feature. The transmission of parental peculiarities is determined largely by the manner in which these have been acquired. Those that have evolved naturally, and have been transmitted through many antecedent generations, tend to reappear with increasing force in each succeeding generation. But artificial modifications, such as mutilation and acquired traits, are more rarely transmitted.

Prof. Talbot, of Chicago, however, has found that $3\frac{1}{2}$ per cent of the Jewish infants inherit circumcision defects. In certain families special tendencies, such as complexion, stature and weight have become an habitual hereditary condition, and definite calculations may be made from these, whereby approximately correct conclusions may be drawn. For instance,

in a given family we may be sure that its members will be tall and spare, or that at a certain age they will grow fat or lean. So also, may trifling peculiarities, such as dimples, and the like, be transmitted with the same certainty as any other hereditary characteristic.

Physiological traits are as frequently inherited as are the anatomical ones. Thus, we observe that certain families tend to longevity, to bear twins, or for the male members to become bald-headed.

Psychological traits are probably more transmissible than any others. From time immemorial certain instincts have led to certain acts, which, by repetition, have crystalized into habits. The tendencies become organized and, thus, what in the parent was due to repetition and habit, is transmitted as a fixed family trait. So, too, many thought processes are cerebro-spinal reflexes, and by force of habit occur independently of the brain. It is known that when a snake that has been beheaded coils around a hot iron rod, it is but an organized reflex act.

Certain habits of thought, too, are transmitted. Thus, in some families we notice that the religious, the physiological, or the calculating sense predominates. We sometimes find, for example, that several or all of the men in a given family have been for generations clergymen, lawyers, or successful business men, as the case may be.

According to Galton's statistics the mental capacity is inherited, be it genius or mediocrity. These psychological traits may be normal or morbid. Normally, according to the law of evolution, which shows that the higher is evolved from the lower, and the more complex from the more simple, we would expect the offspring to have a little higher development than that of the parents.

The law of heredity and evolution is beautifully illustrated in the families of Charles Robert Darwin, the scientist; Harriet Beecher Stowe, the novelist and reformer, and Robert Browning, the poet. In the Darwin family, beginning with William Darwin, barrister and gentleman, recorder of the city of Lincoln, we find an almost unbroken line of inherited intellectual vigor, leading down to Charles Robert Darwin, the scientist. William Darwin's son, William, was a man of education; his son, Robert, had a decided taste for science and was a strong advocate of temperance; he transmitted his love for science

to his son, Erasmus, who was a celebrated poet, philosopher and physician. His son was Robert Waring Darwin, physician, and father of Charles Robert Darwin, the scientist. Geo. Darwin, son of Charles Robert Darwin, the scientist, is one of the foremost astronomers of the present day.

In the collateral branches of this family we also find that the members were all above the ordinary in intellectual development. Charles Robert Darwin inherited the tall stature and philosophical mind of Erasmus Darwin together with his great love for hard intellectual work. From his father he derived his special ability to enter into the study of details. Another point that is of special importance in studying his heredity is that the genealogy of the family lays special stress upon the uncommonly high intellectual development of the wives and mothers of these men.

In the family of Harriet Beecher Stowe we find another study that is not less interesting and instructive. The great-grand mother of Harriet Beecher Stowe was a widow, who with her son, John, immigrated to America in 1638. At that time such a cruise alone would show an indomitable spirit of courage and determination. They are described as "excellent people, readers, thinkers and always animated with love of the public good." Mrs. Stowe's grandfather was a man of more than average ability; he was at once a farmer, a blacksmith and a maker of tools. He always kept a number of college students and members of the legislature as boarders, and often kept pace with the students in their studies. His wife was of Scotch descent,—a woman of intelligence and dignity, and possessed of a lovely character. Of this marriage one son, Dr. Lyman Beecher, was born. He was educated in the ministry. Lyman Beecher married Roxana Forte, a lovely, strong, sympathetic-natured woman; finally, intellectually and in education, she was of superior type. All of the children of this marriage were of superior mentality; two of them, Henry Ward and Harriet, afterwards Mrs. Stowe, became famous. Undoubtedly, climate and environment strengthened their naturally vigorous mental constitution. In this genealogy we can see that Mrs. Stowe came naturally by her great love and sympathy for the unfortunate, even the slave, as well as by the intellect and strength of character which dared to raise an appeal to humanity in behalf of the slave.

In the Browning family we find another very interesting

study of heredity through inter-racial intermarriage. Robert Browning's grandfather was a man of unusual energy and considerable ability; his grandmother was a West Indian Creole, who brought to her offspring the rich, warm imagination of her people. Her son, Robert, the father of the poet, was an intellectual man of highly artistic and poetic temperament. He was said to have had extraordinary power of versifying. He married a woman of Scotch-German parentage, of whom Carlyle said: "She was the true type of a Scottish gentlewoman." She was a very delicate woman with a highly nervous temperament. Thus were transmitted to Robert Browning, the poet, the sound, practical, common sense of the Scotch and the philosophical, idealistic and poetic temperament of the German. In complexion the poet was said to have resembled his Creole grandmother. With such an ancestry we would naturally expect Robert Browning's poetry to be of a highly artistic and philosophical order.

These examples of the evolution of genius could be multiplied at great length and they would all show in the offspring a combination of the influence of environment together with the inherited mental constitution of their direct or remote progenitors.

It seems to be a curious fact that the characteristics of the parent are more frequently transmitted to a child of the opposite sex. In this manner daughters would inherit the characteristics of the father and the sons those of the mother.

This brings us to the consideration of the other sub-class, or atavism, a term used to denote a reversion to the morbid traits or anomalies existing in ancestors, but not in immediate parents. The most striking illustration of this form of heredity is found in the offspring due to the intercrossing of the colored races with the white, which shows that the hybrid offspring are almost identical in respect to color, features and other characteristics, with their colored progenitors. The complexion of Robert Browning is a good example of this reversion to that of his Creole grandmother. Darwin maintained that when hybrids vary from their parents they have reverted to some remote ancestor, and the more extreme the cross the greater will be the reversion to the progenitors, with a reappearance of lost, but probably latent characteristics and a disappearance of the recently-acquired traits. When the

offspring resemble neither of the parents they are said to be mongrels.

The culture and civilization that have taken centuries to evolve may, by the crossing of two distinct races, be submerged, the higher into that of the lower. This intercrossing tends to arrest the immediate progress, break down the type and produce mediocrity. The results of such intercrossing is to be deplored, though in the end a stronger type may be evolved, as in the case of the Brahmins of India who are the offspring of the native Indians and the white invaders of that country.

Interbreeding up to a certain point has a tendency to improve the type and to exaggerate certain characteristics common to both parents, be these normal or abnormal. So it is with intercrossing between two races that are of equal hereditary-ability and like tendencies, in which case the offspring accentuate and hasten the progress toward which both are inclined. Undoubtedly reversion to the characteristics of remote ancestors is one of the great secrets of sporadic cases of genius that have apparently sprung up from the humblest origin to bless the world and puzzle the students of heredity.

Disease, in order to be hereditary, must depend on some inherent anatomical, physiological or psychological abnormality rather than upon infection; although recently-acquired diseases, as I shall attempt to show later on, may be transmitted directed from parent to child; while others,—children of degenerate parents, may be said to inherit a *tendency* to degeneracy rather than the condition itself. But degeneracy in the parent is likely to be persistent in the offspring, for example, a feeble-minded woman may bear children by several different fathers, and all present the mother's weakness, sometimes intensified.

Some claim that the tendency to disease is inherited rather than the disease, and that only under certain conditions will this disease develop. It is probable, however, that the disease itself is inherited, but latent, and that if the environment is favorable the superior force of normal tendencies will cause it to become eradicated; if unfavorable, it will develop, though perhaps, in a modified form. Thus, insanity and crime may be inherited for generations and in spite of the wonderful potentialities acquired through intercrossing there will still occur instances in the offspring of reversion to quite remote

ancestral characteristics. However, Nature frequently limits the continuance of degenerate progeny, by rendering sterile, persons effected by certain diseased conditions, by the abortion of the products of conception, by the still-births, or by the premature deaths of ill-conditioned children.

Unfortunately such a happy consumation does not always follow in the wake of degenerate parents, as the famous examples of the Juke family, of "Margaret, the mother of criminals," and of the German drunkard, whose family history is recorded by Prof. Belman, of the University of Bonn, will show. In these three progenitors we can see what a tremendous force for evil abnormal hereditary characteristics may lead to.

Ada Juke, a pauper and harlot, was born in 1740, and died from alcoholism in 1800. "Of her lineal descendants, 7 were convicted of assassination; 76 were convicted of minor crimes of all grades; 144 were mendicants by profession; 61 others were cared for by various public charities, and finally, 181 were prostitutes. The sum total spent by this government on the maintainance, surveillance, prosecutions, etc., of this family amounted to over \$1,150,000.¹

"Margaret, the Mother of Criminals," a pauper, was born in 1801. She had about 700 lineal descendants. Of these, 200 were criminals of the dangerous class, 280 adult paupers, and 50 prostitutes, while 300 children of her lineage died prematurely.² The State spent over \$1,500,000 on their account.

Prof. Belman's case³ was that of a notorious drunkard, who died in 1800. Of his 834 descendants, 7 were convicted of murder, 76 of other crimes, 142 were professional beggars, 64 lived on charity, and 181 of the women of the family lived disreputable lives. This family cost the German government for maintainance and costs in public institutions \$1,250,000, or \$1,500 each.

In making a study of hereditary individual variations, it is difficult to determine the line of demarcation between direct heredity and prenatal influences.

Hereditary individual variations are best studied in two

¹Abstract taken from "The Jukes: A Study in Crime, Pauperism, and Heredity," by R. L. Dugdale.

²From Prof. Brown's paper, "Medical Aspects of Crime."

³Loc. Cit.

sub-classes—acquired traits, or direct inheritance of prenatal characteristics; and prenatal influences, or direct causes for individual variations.

Darwin has clearly shown that the tendency to vary is itself hereditary; and the greater the variations in the ancestors, the more likely are they to occur in the future. So it is with individuals who have evolved new characteristics, which greatly vary from those of their parents in any special direction. These individuals will tend to produce offspring varying more in the direction of the newly acquired traits than in any other. This tendency to variation is invaluable to mankind, for without it a stereotyped race would be evolved whose limitations could be foreseen.

Recently acquired characteristics are probably transmitted, though in a lower degree than those that have been transmitted through generations. A good illustration showing that recently acquired peculiarities, which have only appeared once or twice in the history of mankind, are transmissible, is the case of "Lambert, the porcupine man, whose skin was covered with warty projections, which were periodically moulted, and who had all his six children and two grandsons similarly affected;" or the case of Audrian, the Russian hairy man, whose son had the same peculiarity.

Epilepsy and moral insanity, which is characterized by a lack of appreciation of the difference between right and wrong, or the rights of others; and the ethical sense, respect for law, or the opinion of people, are feeble or all wanting, are often transmitted from parents addicted to the use of alcohol. A brief statement of the pathological effects of alcohol upon the body and mind will help more fully to show why alcoholism acts so deleteriously on the offspring. Alcohol abstracts water from the tissues and causes them to become hardened. This hardening process interferes with their nutrition and the cells become shrunk and atrophied. The consequent degeneration interferes with or destroys the normal functional activity of the organs and produces a paralytic effect on the nervous system, from periphery to center. This has been called a "sensorial palsy," because careful measurements of the senses before and after the taking of alcohol have shown a diminution of the activity and astuteness of the senses, which passes on to full paralysis. Thus, according to the amount of alcohol consumed, there will be a defective action of the brain cells, which

is manifested by the abnormal condition of the intellectual, motor and sensory states of the individual. This lack of correlation between the higher and lower senses and the resultant insufficiency of the brain cells must also act upon the organs of the body, perverting their functions and thereby reducing the vital energy below what would be required to form a proper association of ideas; in other words, a transient, artificial insanity, or irresponsibility is induced. Now then, a child conceived at such a time would be almost sure to inherit mental defects in exact proportion to the inefficient brain-cell reaction of the parent. Take the father of Napoleon for an example. He was a drunkard who died young of a cancerous affection, probably brought on by the weakened resistance of his tissues due to his excesses in alcohol. Napoleon was epileptic and morally insane. His sisters were very immoral and hysterical. From his mother, who was a woman of "solid, resolute, intelligent and imperious character," he probably inherited some of those gifts which afterwards helped to make him famous. The foregoing evidence is sufficient to show that the tendency to vary in abnormal directions is as possible as to vary in the normal directions; that those whose parents drink to excess are peculiarly predisposed to degeneracy, especially to moral insanity, which no amount of culture can overcome. In addition to epilepsy, insanity and idiocy, the vicious and criminal instinct may be evolved from parents addicted to alcoholism. Some of the leading neurologists claim that conception, occurring while the parent is intoxicated, is very likely to produce offspring that is idiotic or will become insane. So, too, children born of mothers addicted to the opium habit are degenerate and usually die of marasmus unless nursed by the mother or given opium with its food. Now then, if the opium habit can be directly transmitted, it is probable that other habits, such as the use of alcohol and tobacco, may be also transmitted directly.

Because of its effects upon the individual and the offspring, we must consider another important and growing factor in the study of heredity—tobacco. Sir Benj. Brodie says: "No evils are so manifestly visited upon the third and fourth generation as the evils which spring from the use of tobacco." Tobacco, like opium and alcohol, tends to lessen the vital resistance of the individual, to produce organic and nervous diseases, such as heart disease, asthma, smoker's cancer, and neurasthenia

with its train of allied diseases due to impaired functioning of the nervous system and brain.

The offspring of such parents are likely to inherit the stigmata of degeneracy which are manifested by these unstable nervous systems. The use of tobacco is a prolific cause of neurasthenia in the offspring—a condition in which the organs, though not degenerated in structure, have taken on a degenerative function, with a restlessness and undue expenditure of force without the restraining influence of the central nervous system. Thus the results are exhaustion of the vital force; and the brain and spinal cord diverges from the onward progress of evolution, because the neurasthenic is no longer equal to coping with his environment. Children born after the parent has acquired this condition of nervous exhaustion are likely to repeat the abnormal condition by adding degeneration of the structure of those organs, which in the parents were only disorders in nervous function. As the organs of reproduction are strongly affected by nervous exhaustion, it naturally follows that the offspring will not have the strength for a vigorous physical and mental development. This is probably the reason why genius frequently leaves no posterity. Undoubtedly the tobacco habit, among people of good heredity, is one of the great causes for the alarming increase of insanity. When we consider the widely disseminated use of tobacco, and remember that characteristics acquired through several generations are more likely to be transmitted to posterity, the outlook for the future as regards the decrease in nervous diseases becomes a very serious matter, and one that is not likely to be settled by the theory of immunity, which means that gradually there will be evolved by the body such a degree of tolerance for this poison as shall render its effects negative. Inasmuch as alcohol has been used in some form since the earliest history of mankind, and its action upon the individual seems ever to have been the same, it is not likely that our bodies will in the future become immune to the present evil action of such poisons.

Again, too frequent child-bearing, by reducing the vitality of the mother, reacts against the child and deprives it of the strength that is necessary for its normal development. It is estimated that out of every one thousand children born, only six hundred attain adult age. The average healthy mother

should not have a child oftener than once in three or four years.

The evidence already adduced is sufficient to show that the tendency to vary in abnormal directions is as natural as to vary in normal directions; that such recently acquired hereditary traits predisposes to defective consciousness and functioning of the brain cells, with resultant inefficiencies or irregularities of the sensory, motor and intellectual life of the individual.

Prenatal influence, or direct causes for individual variations, are the factors which exert a selective influence for transmitting hereditary characteristics and irrevocably fixing upon the offspring his definite individuality. In other words, hereditary characteristics tend to be transmitted, acquired traits to modify them; while prenatal influences further modify and make permanent the character of the offspring. If these influences are weak or neutral, the less do they interfere with the transmission of general hereditary tendencies; if strong, the more do they accentuate the recent or remote characteristics of the progenitors.

Prenatal influence may be justly termed the early and most important education of the individual. Its power depends on two conditions—the physical, mental and moral state of the father and of the mother at the time of conception, but more particularly on that of the mother; and on the environment of the mother during the whole period of her gestation. This is especially important in the early months of pregnancy, because, then, the brain cells of the new being are in a plastic state and will react to the prenatal influences which the mother exerts upon them. Hence, under wise development and mental control, wonderful potentialities are acquired, and recently acquired characteristics may be made to become a permanent hereditary force. To illustrate, a mother of sterling integrity of character was, during the time of one pregnancy, in ill health and greatly worried by financial and other troubles—so much so that she frequently thought of suicide as the only solution of them. The child was born and at an early age manifested a strong desire towards suicide, and has been saved from such a course only by her strong moral sense.

If the environment of the mother is vicious, so will be the tendencies of the child, unless reversion to hereditary traits, with its saving grace, steps in to mitigate the evil result of that environment. For, in organizing the psychic centers of the

offspring, like tends to produce like, as—dishonesty to produce dishonesty; hatred, hatred; violence, violence; or on the other hand, harmony to produce harmony; love, love; and strength, strength. If the child is begotten in the spirit of hate, it is morally illegitimate, and its postnatal life is likely to record the psychical impression made at this time. If woman has maternity thrust upon her, and, with murder in her soul, resents the outrage by the desire or attempt to destroy the product of such a conception, it would certainly be a divergence from the natural law and order if the child did not develop certain brutal tendencies and disregard for the rights of others, or even develop into a murderer.

Another factor to be reckoned with in the study of heredity is the influence of climate. Mr. Dexter has made a special study of the influences of climate, and the report of his investigations show over "four hundred thousand misdemeanors from the records of the police, the schools, the penitentiaries, etc., in New York City, as well as errors in ranks, strength tests in gymnasiums, etc." And comparing them with data obtainable from the weather bureau, he arrives at the following results for temperature conditions: "Unusually high temperature was found to be accompanied by an excess of misdemeanors; low temperatures by deficiencies. In conditions of intense heat, such as severe sunstroke and the like, death from suicide is the only misdemeanor that is in excess at this temperature. A high percentage of moisture is less productive of misdemeanor than low humidity." This is due to the fact that in wet weather the air does not contain its full proportion of oxygen, consequently the nervous system is relaxed and depressed, with a resulting uneasy feeling of languor and drowsiness. Again, to quote Mr. Dexter: "Statistics of the wind show that misdemeanors were less during calm than moderately high winds, but that they grew less again with high wind velocities. They are less frequent on cloudy and rainy days than in pleasant weather."

Only recently has the cause or mechanism of inheritance been known with any degree of certainty. Now it is understood that the transmission of heredity must take place through the peculiarities of inheritance found in germ cells—the sperm and ovum.

How the hereditary traits are represented in these cells is not known, but it is probable that they contain certain at-

tributes which, in the process of development, are transformed into the peculiarities of the individual. In this transformation, which represents the whole life history of the person, certain external and internal causes act together to produce hereditary repetitions or hereditary variations. Among the external causes are environment, disease, and climate; while the internal causes depend upon the intercrossing of like and unlike hereditary tendencies. Thus man inherits his mental, moral, spiritual, emotional, passional and physical organism.

If, then, heredity is an actual potent factor in the making or marring of a human life, how imperative is it that men and women, when assuming the attributes of God as creative beings, shall realize the Divinity, the tremendous power invested in them, and so elevate their psychical condition that when they take upon themselves the responsibility of creating a new soul they may rise to the utmost heights they are capable of reaching. The time must come when civilization will no longer excuse parents for doing God's most important work with less preparation and understanding than they bring to bear upon the least essential work found in the daily routine of life. Moreover, the better civilization will come when the new and universal family sense shall awaken mankind to the knowledge that it is the right of every human soul to be well born, and to the necessity of preventing the conception of a progeny—criminal, insane, or irresponsible by inheritance.

The study of heredity is of the utmost importance to the student of sociology, of science, and of ethics; and to legislators, because it gives them a solid working hypothesis from which they are likely to derive valuable conclusions and methods of procedure. What are those conclusions? They are: That there should be a "proper selection and adaptation of parents;" that the quality of the offspring should not be sacrificed to quantity; that parents should have no legal or moral right to breed criminal or irresponsible persons, and should, therefore, be held responsible for the crimes their children commit; that ignorance and selfishness result in an irresponsible propagation of a hapless race; that the only way to limit the production of the hereditarily diseased, insane, irresponsible, and criminal, is by the use of the recent safe surgical measures for asexualizing and thereby rendering it impossible for these unfortunates to beget a dangerous progeny; that excessive child bearing reduces the vitality of the mother

and produces weak offspring; that it is better to prevent the possibility of conception than to add to the avoidable and purposeless sufferings of the human family; that maternity should not be thrust upon a woman who is unwilling or unfit to accept the responsibilities as a mother; that during pregnancy the mother should be surrounded by every care and comfort that intelligence and love can provide, and that all antagonistic and disagreeable conditions should be vanished in order that the offspring may have every opportunity of being born to a healthy and happy life; that motherhood, under these improved ideals, may be looked forward to as the crowning glory of the family life, rather than as a continual evidence of the conditions of servitude and inequality that mark the present position of most women in marriage.

A different classification and provision should be made for the care of the criminal—the irresponsible and the defective classes. Each class should be separated from the others, and a strong effort made to replace bad habits by good ones; and all should be taught some useful occupation. Furthermore, idleness should be absolutely prohibited. Young and accidental criminals should not be brought into contact with hardened criminals, and the punishment of major crimes or a second offense should be asexualization. Hereditary criminals—the children of degenerates—should be removed at an early age, not later than five years old, and placed in a suitable environment, where a strong, patient trial should be made to teach them good citizenship. Moreover, in dealing with crime we must not forget the causes which tend to produce it, and then remove such causes if possible. The public as well as the private conscience must keep pace with the intellectual growth of the people. And when evolution shall have reached its highest achievement the soul will manifest itself perfectly in a sound organism; then shall the children of mankind be in perfect harmony with each other and with the universal spirit of God. Browning must have felt the significance of heredity when he wrote:

“ Fool! All that is, at all,
Lasts ever, past recall;
Earth changes, but thy soul and God stand sure:
What entered into thee,
That was, is, and shall be:
Time’s wheel runs back nor stops: Potter and clay endure.

“ He fixed thee 'mid this dance
 Of plastic circumstance,
 This present, thou forsooth, wouldst gain arrest :
 Machinery just meant
 To give thy soul its bent,
 Try thee and turn thee forth, sufficiently impressed.

“ So, take and use thy work,
 Amend what flaws may lurk,
 What stain O' the stuff, what warpings past the aim !
 My times be in thy hand !
 Perfect the cup as planned !
 Let age approve of youth, and death complete the same !”

NOTE.—I would especially acknowledge my indebtedness to Prof. Conklen's valuable paper, “ The Phenomena of Inheritance,” and to the many other scientists whose valuable investigations and contributions in this field of study has made this paper possible. A. M. S.

AUTHORITIES CONSULTED.—Profs. Galton, Darwin, Ferri, Dugdale, Lombrosi, Ellis, McCarsy, Burr, Ballantyne, Bowers, Conklen, and others.

[39 ST. HELENS AVENUE.]

Etiology of Typhoid Fever, and Treatment in Private Practice.

BY GRANVILLE E. DICKINSON, M.D.,

UPPER FAIRMOUNT, MD.

Read before the Medical and Chirurgical Faculty of Maryland, April 24, 1901.

ALTHOUGH this disease is probably coeval with civilization, as it is said to be easily recognizable in the description of Hippocrates, Galen, and other ancient as well as all the modern writers, yet it is to-day probably attracting as much attention as any other disease, and new theories are constantly being advanced as to the etiology and treatment. It is an acute infectious fever, due to the typhoid bacillus, or bacillus of Eberth, the latter name being taken from the discoverer, who found it in the intestine of a case of the disease

in 1880. Previous to that date the cause of the disease was unknown. Since then it has also been found in the lymphatic system, including the mesenteric glands and spleen, in the liver, kidneys, blood, bone-marrow, bile, urine, as well as the rose-colored spots. Neufeld and Curschman succeeded in cultivating typhoid bacilli from the blood in the rose-colored spots about two years ago, thus demonstrating that the roseola depends on the lodgment of the bacilli in the skin, and that they are carried there by the blood. Auerbach says Eberth's bacillus was discovered in the blood in seven out of ten cases of typhoid fever of varying severity.

It may be concluded from the researches of these authorities that the rose spots of typhoid fever are inflammatory foci, resulting from the deposition of typhoid bacilli in the lymph vessels of the skin. Whether bacilli may reach the free surface of the skin through these lesions has not been demonstrated, but it does not seem unlikely that this may occur, and the possibility of dissemination of bacilli from the skin should not be lost sight of.

Loeb and Sanarelli say typhoid fever is to be looked upon as an infection of the entire lymphatic system. The anatomical changes are more striking in the solitary glands of the ileum and Peyer's patches. The glands are enlarged by the accumulation of leucocytes, which develop to the stage of epithelioid cells, when they become necrotic and disintegrate. When this disintegration is massive there is a discharge of a large number of the dead cells into the bowel, resulting in the well known typhoid ulcer. Large ulcers are sometimes formed, especially toward the lower end of the bowel by the union of others. Sometimes these ulcers rupture, discharging their contents into the peritoneal cavity, causing fatal peritonitis. Sometimes the large intestine and appendix are invaded by these ulcers and perforation may occur in either location. More commonly these ulcers heal.

The disease is certainly contagious, but only slightly so, as the contagion is caused only from the stools, vomited matter, and possibly the urine and skin. These are usually disinfected and promptly disposed of—at least the three first named. Carelessness in this respect endangers physicians, nurses, and all others attending on typhoid cases. For instance, if the discharges are allowed to dry on linen without the use of a strong disinfectant, the bacilli pass into the air of

the room and may infect any or all of the inmates. And when the discharges are thrown upon the earth or even buried in the upper layers of the soil without being disinfected, the bacilli are said to retain their vitality for at least six months, and may be carried by flies or by the wind when the soil is worked and becomes dry. I have seen several cases in which I believe the bacillus was carried by flies.

Dr. Howard H. Tooth, referring to enteric fever in the British Army in South Africa, says certain factors completely beyond control are dust and flies, and he mentions a special species of flies which seem to prefer enteric cases and are in vast numbers and ubiquitous. The bacilli most frequently enters the blood through the stomach in drinking water or milk.

The diagnosis of typhoid fever is usually easy when the distinctive signs are present, but they are frequently absent; then a correct diagnosis can only be made by an examination of the blood.

Carlo Bareggi says: In the hospital at Milan, during the last thirty years, typhoid fever has been mistaken for acute tuberculosis fifty-two times, and tuberculosis for typhoid fever ninety times. He also says the Widal test is not always accurate.

The autumnal type of malarial fever frequently closely resembles typhoid fever and sometimes the two diseases are concurrent, then the difficulties are increased.

The natural tendency of the disease is to recovery, and like all the specific infections, it is self-limited in its course, and under all forms of treatment the great majority of cases will recover. The most frequent causes of death are: Asthenia, the result of specific toxemia; intestinal hemorrhage or perforation; intercurrent disease, the result of mixed infection; the first being by far the most frequent cause. Since the disease runs a regular course, uninfluenced by any known medicine, and when death occurs, it is usually from asthenia or accident, our aim in treatment should be to keep up the strength of the patient as much as possible with proper treatment—tonics and stimulants, keep the temperature down, and combat serious and dangerous symptoms, should they arise, by appropriate remedies.

It is not a disease that calls for any special therapeutic measures. Many of the accidents and complications are warded off or materially lessened by the watchful and skillful nurse.

The digestive power of the individual is diminished, and improper food or over-feeding result in local disturbance of the digestive organs and possibly auto-intoxication, therefore the diet should be light, easily digested, and one which will leave but little irritating residue in the bowel. Milk is the most suitable diet in the great majority of cases. With this may also be given mutton or chicken broth, beef juice, albumen, water, etc. The diet should be entirely of a liquid character, particularly during the second and third weeks, also during convalescence.

As I said before, we have no specific remedies for typhoid fever, neither have we any knowledge of any drug that destroys the bacillus of the disease, but we can diminish somewhat the amount of toxins, and hence, to an equal extent, their absorption into the general system. The meteorism, vomiting, and diarrhea, which are so prone to manifest themselves if the *prima via* be neglected, may also be lessened.

A few practitioners who are enthusiasts of the Woodbridge treatment, claim the disease can be aborted, but the prevailing opinion I think is that it can not.

Dr. Anders, of Philadelphia, says: "To address antiseptic remedies to the bacillus of Eberth, or its toxins, or to the intestinal lesions, would, I believe, be hopelessly futile, and the claim that clinicians have aborted the disease with these remedies lacks confirmation, and I wish to protest against the routine use of the so-called Woodbridge treatment, as I have never seen the gratifying results claimed for it by its author and his disciples."

Dr. Quine, of Chicago, says: "The idea that typhoid fever can be aborted by the administration of antiseptics and purgatives is another ruined theory."

Tyson says: "The antiseptic treatment has not a truly rational basis, while the extravagant claims of its advocates discredit their results."

Billings says: "The so-called specific forms of treatment in the shape of bowel antiseptics, like carbolic acid, calomel, etc., are no longer considered specific by anyone but the enthusiastic few who still treat typhoid fever and not the patient. The so-called antiseptics have run a more or less unhappy course."

When the disease is said to have been aborted, I think the cases are probably similar to one which came under my obser-

vation a few months ago in which the disease was said to have been aborted by the Woodbridge treatment in three days, but there was a marked crisis on the twenty-first day, although it was claimed by one of the disciples of Woodbridge that the disease changed from malarial to typhoid fever on the thirteenth day, which was only eight days the patient really had typhoid fever. The No. 1 Woodbridge tablets were given for the first time on the eighteenth day and the disease was aborted on the twenty-first day; the cold sponge bath and pack were also used.

I believe the antiseptic treatment is sometimes beneficial by preventing the putrefactive process in the bowel, and thereby of secondary intoxications of the blood. In this way they also counteract the offensive odor of the stools and arrest the growth and development of ordinary intestinal bacteria. Salol in doses of 3 to 5 grs. every three hours is, I believe, the best of the intestinal antiseptics. The colon or lower bowel is sometimes the seat of extensive ulceration, this is productive of marked tympanitis. And at times an exhaustive diarrhea supervenes; in these instances irrigation, if judiciously employed, tends to sweep from the bowel decomposing material and irritating micro-organisms. For the constipation, which is sometimes present throughout the entire course of the disease, soap-suds enema every second day gives the best results. Aperients, during the later stage or during convalescence, given by the mouth, are dangerous. For the marked distention of the bowel, especially if there is diarrhea, enemas of turpentine, fomentations, and turpentine stupes are not only beneficial in relieving these, but by their stimulating action hastens the repair of the ulcers. It may also be given internally in doses of 10 minims every four to six hours. The Brand method of treatment will usually meet all these indications and can be easily used in hospital practice. It has a favorable influence on the gastrointestinal tract by reason of its action in reducing temperatures, in lessening nervous manifestations, and in imparting tone and vigor to the heart and the muscular system. The digestive functions are invigorated and the glands secrete their respective juices. While it does not prevent the formation of toxins, it expels them as soon as they are formed, and in cases treated with the cold bath the elimination of the toxic products is enormous during the active stage of the disease.

The Brand treatment, when applied to individual cases, affords better results than any other form of symptomatic

treatment. In the University of Pennsylvania Hospital, also in the Johns Hopkins the mortality has been decreased to about 6 or 7 per cent; and Tyson says "all who died in the University Hospital perished through perforation or hemorrhage." The method has many advocates and few enemies. That the method has many friends is due to the manifestly good results generally attained. That it has enemies is due to the fact that, like everything else, it has been used as a treatment for typhoid fever and not for individual human beings.

While there can be no question as to the practical success of the Brand bath in hospital practice, in private practice it is not feasible, there being several objections to it; therefore, we have to resort to the sponge bath or cold pack. Vigorous rubbing is an important feature in the former, and the sponging continued from twenty to thirty minutes if the temperature is 102.5° F. or more. This method, as a rule, I consider preferable to the cold pack. While the external application of water is so productive of these happy results, the internal administration of large quantities frequently has decided advantages. And the patient should be encouraged to drink as much water as possible.

It is not necessary to refer to the antipyretics, as I consider them of very little value in this disease, and some authorities claim they increase the number of relapses and the liability to intestinal hemorrhage.

Stimulants are frequently necessary in the later stages. If the heart becomes weak and there is a low muttering delirium, whisky or brandy should be given freely, particularly if the tongue is dry. Strychnine is also useful, and may be given hypodermically in full doses for progressive heart failure.

Delirium is usually quieted by the cold sponge bath and stimulants. I have frequently seen very good results from both. An ice-cap on the head is also beneficial, but it may be necessary to give morphia hypodermically. Rest and sleep may be secured by chloral, bromides, or other sedative or hypnotic. It is sometimes necessary to give morphia hypodermically for this purpose also. Frequently it is all that is necessary to check intestinal hemorrhage, if the patient is kept at perfect rest, but I prefer extract of opium with acetate of lead for this purpose, one-fourth grain of the former and from one to three grains of the latter every three hours. Ice may be given freely and cold

applied to the abdomen. Where prompt action is necessary, ergot may be given hypodermically.

It is hardly necessary to say anything on the subject of perforation, as it is very seldom, if ever, these cases recover in private practice. In hospitals the operation of laparotomy is sometimes successfully practiced. Bedsores are one of the dangers of this disease, which can frequently be prevented by scrupulous attention to cleanliness. The patient should be thoroughly dried after each bath, all traces of urine and other discharges removed immediately, and the patient frequently sponged with alcohol or whisky, and the position in bed frequently changed. Should a sore appear, it must be antiseptically dressed and protected from pressure by pads and air cushions.

During convalescence the patient should be carefully watched. Constipation should be treated by enema only, as even the simple aperients by the mouth are dangerous during this stage. Frequently the deep-seated ulcers do not heal for at least a week or ten days after the temperature becomes normal. For this reason the patient should be kept as quiet as possible, even sitting up in bed or reaching over for anything may rupture the bowel at the seat of this ulcer and cause fatal peritonitis. Solid food also causes the same dangers; therefore the patient should have only a liquid diet for at least a week after the temperature becomes normal. I have seen one case in which perforation occurred from eating dried beef after the patient was discharged, although positive directions as to diet had been given.

While the conclusions reached by some of the best authorities on the serum treatment is that it has no real specific curative value, yet the success which has been attained by it is sufficiently good to give us hope of still better results, but for the present we must continue the treatment which modern medicine has shown to give the best results.

Ptosis of the Liver.

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THE patient, J. B., a white man, 29 years of age, employed as a moulder, was admitted to the Philadelphia Hospital on June 28, 1897, complaining of cough, vomiting, weak spells, and swelling of the feet. He dates the beginning of his illness to some three years before, when, while going to work, he was suddenly seized with vertigo. It is said that he frothed at the mouth, but he remained conscious of his surroundings. He had not been quite well from this time, complaining principally of the symptoms named. The feet had begun to swell within a year, and attacks of vertigo recurred from time to time. Vomiting took place after eating. At times there was diffuse tenderness in the epigastrium. Cough had been present for two weeks. The patient had had measles in childhood, but denied all venereal infection. He had been always fairly strong and healthy. He used tobacco moderately, and alcohol not at all. On physical examination, the cardiac impulse was seen to be exceedingly diffuse and wavy, being most pronounced below and to the right of the ensiform cartilage. A wavy impulse was visible also over the inner third of the right clavicle. On palpation, no thrill could be felt. The area of cardiac percussion dullness appeared to be merged below with that of the liver. The action of the heart was somewhat arrhythmic, and duplication of the sounds took place occasionally. On auscultation, at the apex of the heart the first sound could be heard with clearness and the impact felt with the stethoscope, being followed by a murmur that continued almost up to the succeeding systole. In other situations both sounds of the heart could be heard with distinctness. The murmur was transmitted into the left axilla. No capillary pulsation was made out. A slight difference in the percussion note beneath the clavicles was made out in favor of the left side. The pulmonary percussion note was clear, the breathing noisy and accompanied by numerous sibilant râles anteriorly. Posteriorly, the percussion note above the spine of the scapula was less good on the left than on the right. On a level with the spines of the scapulæ, and in the interscapular region, the resonance was better on the left than on the right over an extent equal to a hand's breadth. Below, the resonance was good on both sides. Râles were pronounced

posteriorly, particularly on the left side, and in places partook of the character of coarse crackling. Tubercle bacilli were not found in the sputum. The area of splenic percussion dullness appeared not to be increased. The area of hepatic percussion dullness began on a level with the sixth rib in the right nipple line and pursued a horizontal course, with a somewhat downward tendency posteriorly. The lower border ran parallel with, and quite two fingers' breadth below the costal arch, extending well into the epigastrium and to the left, merging above with the cardiac dullness. There is no record of an urinary examination.

The patient remained in the hospital but four days, so that further study was prevented. I looked upon the case as one of displacement of the liver, in conjunction with aortic incompetency. There existed also a chronic bronchitis, and the physical evidence pointed to the presence of pleural adhesions. The displacement of the liver could be explained by the laborious character of the occupation followed by the patient, and it is possible that besides he was accustomed to the use of a belt about the waist, though it is to be regretted that concerning this point there is no note. This point is of especial interest, as displacements of the abdominal viscera are in general more common in women than in men, and this peculiarity of distribution is attributed to the pressure differences in the clothing of the two sexes, and especially the use of constriction by females. Whether or not the existing gastric disorder was in any way related to the displacement of the liver, can be a matter for speculation only; but it can easily be understood how such displacement might readily be attended with changes in the relations not only of the stomach and bowel, but also with changes in the relations of the ducts of the liver and in the blood supply. The valvular defect bore probably no relation to the hepatic condition. The diastolic murmur, though not heard in the aortic area, not transmitted downward in the course of the sternum, and audible only at the apex, I believed to be due to aortic insufficiency, as there was no evidence of mitral or of tricuspid obstruction, or of pulmonary insufficiency, and none of pericarditis. I am unable to explain the anomaly, which is exceptional in cardiac auscultation. During the short time that the patient was under observation the temperature did not rise above 99° F.

The physical conditions relating to the liver in this case

are not unlike those in a case reported by F. A. Packard.¹ In this, jaundice was present, together with paroxysms of pain referred to the situation of the gall-bladder. During life it was thought that either hepatitis or subdiaphragmatic abscess existed, although on post-mortem examination a movable liver was found. Packard refers to several other cases in which like conditions were present, and he dwells particularly upon the possibility of error in diagnosis.

Mr. Frederick Treves discusses this subject comprehensively in an admirable paper on "Ptosis of the Liver and the Floating Lobe."² He points out that while these abnormalities are not common, they are of considerable diagnostic and therapeutic significance.

Ptosis of the liver consists in a sinking down, or dropping in the abdominal cavity of the liver, free from gross disease and from other than mechanical causes, such as deformity of the spine or thorax, or pleuritic effusion, or the like. The terms "prolapse" and "dislocation" have also been applied to the same condition. Objection is raised to the qualification "movable," "wandering" or "floating" as inappropriate. The floating lobe consists in portion of the right lobe, which projects downward in the form of a large tongue-like appendage, and is often associated with some depression of the entire organ, or some tilting down of its right portion.

The liver is suspended in place by its own ligaments, by intra-abdominal tension, possibly by intra-hepatic tension, and principally by the vena cava. In its descent, therefore, it is the anterior border especially that sinks down, and this may occur in any degree. At the same time the liver becomes flattened and deformed. The displacement is far more common in women than in men, occurring particularly in late middle life. It appears to be due largely to general relaxation of the tissues of the abdomen. It may be associated with movable kidney. The condition may be mistaken for ovarian cyst, cyst or tumor of the mesentery, new growths of the abdomen, hydatid cyst, and, most commonly, for an enlarged and movable kidney.

In the treatment of ptosis of the entire liver, a well-made belt or other form of support may be of considerable service.

¹Transactions of the College of Physicians of Philadelphia, Vol. XVIII, 1896, p. 230.

²The Lancet, May 12, 1900, p. 1330.

Operative treatment has consisted in fixing the organ in place by various means of suture. In the treatment of the floating lobe, excision has been practiced, or the lobe has been sutured to the anterior abdominal wall; or the distended gall-bladder, with which the condition has often been associated, has been incised.

[224 SOUTH SIXTEENTH STREET.]

Duodenal Stenosis Due to Gall-Stones: Report of a Case.

By ALBERT E. TAUSSIG, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, March 21, 1901.

THE great majority of gall-stones that pass down through the common duct into the duodenum pass through the intestine without hindrance and are excreted with the stool. Such stones are rarely larger than a small hazelnut. When the stones are larger, however, their elimination is not so simple. Such stones can not enter the cystic duct, still less can they pass the sphincter that separates the common duct from the duodenum. They usually, sooner or later, become adherent to the wall of the gall-bladder or imbedded in it. This may be followed by an inflammation about them; adhesions form between the inflamed gall-bladder and other organs or the parietes, and the stone burrowing its way through the fibrous mass escapes from the gall-bladder. Such stones may penetrate the bowels, stomach, pelvis of the kidney, ureter, bladder, uterus, vagina, pleura, liver, portal vein, and the abdominal wall. They have been vomited from the stomach, coughed from the lung, passed from the bladder, and expelled from the uterus during childbirth. Porges relates a case of apparently incurable fistula in the right thigh that was supposed to be tubercular or syphilitic and that resisted all treatment. On opening up the fistulous tract, he found near the right trochanter a large gall-stone that had wandered down, retroperitoneally from the gall-bladder.

Of all the abdominal viscera, the one most apt to be pierced

by an ulcerating gall-stone is the intestine. The ileum, on account of its mobility, is but rarely perforated. The colon and duodenum are more frequently affected. In its normal position the fundus of the gall-bladder lies against these portions of the intestinal tract; if it lies rather towards the median line, the stone will perforate into the pylorus or the first part of the duodenum; if it lies more to the right, into the colon or the second portion of the duodenum. If the stone has penetrated the colon, it rarely causes much trouble, but is passed unconsciously. If it enters the duodenum, it usually passes downwards into the ileum, and there or even in the jejunum may cause intestinal obstruction. A large number of cases of ileus, often ending fatally and due to the impaction lower in the gut, of stones that had ulcerated into the duodenum, have been reported. Much less frequent are the cases in which the stones have perforated the stomach. Here pyloric stenosis may result, leading to stagnation of the stomach contents. If the stone has actually penetrated the gastric cavity and lies loose within it, it may act as a ball-valve. Osler has reported a number of such cases in which such a stone caused paroxysmal pyloric stenosis separated by intervals of comfort; the obstruction occurred whenever the stone happened to be in front of the pyloric orifice.

More frequently we have a pyloric or duodenal stenosis caused by adhesions of the pylorus to the inflamed gall-bladder, or by an inflammatory thickening of the pylorus and duodenum, or by the perforation into the lumen of the pylorus or duodenum of a stone so large as to occlude it. In such cases we usually have paroxysmal attacks of gastralgia, due to violent peristaltic contraction of the gastric muscularis; later dilatation with fermentation of the gastric contents ensues. The diagnosis is apt to be that of an ulcer scar at the pylorus, or if the stone can be felt, even of carcinoma—until the detection of a stone in the stool or vomit clears up the diagnosis. Occasionally, as in a number of cases cited by Gaillard, the stones have even been obtained by means of the stomach tube.

Sometimes stones that have penetrated the lower duodenum do not pass down into the jejunum and ileum without further disturbance, but remain in the duodenum and cause trouble there. A number of such cases of obstruction near the lower end of the duodenum are on record. They have a very definite symptomatology—persistent vomiting of large amounts

of bile and absence of meteorism and fecal vomiting. Both symptoms—positive and negative, prove that while there is intestinal obstruction, the seat of the stenosis can neither be in the lower part of the gut (owing to absence of ileus), nor proximal to the mouth of the common duct (owing to biliary vomit). The stomach contents in such cases should contain pancreatic juice in addition to the bile, though I do not know that this has ever been looked for.

Cases in which the stones perforate the duodenum between the pylorus and the mouth of the common duct and remaining there cause a stenosis at this point, must be very rare. Indeed, in the literature at my command, I have not been able to find the report of a case. It would not seem possible, clinically, to differentiate such a condition from that of pyloric stenosis. The following case, observed at the medical clinic of the Washington University Polyclinic, illustrates this condition:

Edith B., 31 years of age, midwife, came to the clinic for treatment March 9, 1900. Her family history was good, and except as follows she had never been ill. Has borne two healthy children, the younger six years old. No venereal history ascertainable.

Six years ago she was awakened one night by a severe colicky pain in the epigastrium lasting several hours. Three years ago she had a similar attack, and one year ago a third. The third attack was followed by icterus, the first two were not. She had never had typhoid fever; in fact had always enjoyed the best of health.

Four months before coming to the clinic she had an attack somewhat resembling the previous ones, but characterized less by pain than by what she calls "an uneasy, smothering feeling" in the epigastrium, accompanied by a sensation of gastric distention. The distress was relieved by the application of heat; but instead of soon being replaced by a condition of well-being, as had been the case before, it had recurred at frequent intervals and had entirely incapacitated her for work. She soon began to vomit, usually from one-half to two hours after eating, and sometime before coming to the clinic had retained practically nothing. Solids had been retained longer than liquids, and all food had been retained better when she was in the recumbent position. Oddly enough, castor oil and other drugs had been retained better than food. The vomit had never been large in quantity, had a sour taste, and had only once been blood-streaked. Appetite good, but capricious, thirst excessive, bowels habitually costive.

Patient was pale and thin; she said she had lost thirty-five pounds in four months.

The thoracic viscera were apparently normal. On inspection, the stomach could be made out as a smooth, rounded tumor filling the epigastrium. A series of vigorous peristaltic waves could be seen traversing it from left to right. The stomach tube was introduced and contents expressed; this was two hours after an Ewald breakfast. There were obtained 160 c.c. bread and water, fairly well macerated and digested. A few flakes of bile-stained mucus were present, but none of the milk ingested the day before. The stomach contents showed no sign of putrefaction or unusual fermentation. Total acidity 0.18 per cent, free HCl (Congo) 0.09 per cent, no lactic acid present. The stomach was then inflated; laterally its borders extended to the edge of the epigastric region, inferiorly did not quite reach the umbilicus. No tumor could be felt. After the expulsion of the air, the abdomen was very flaccid and the edge of the liver could be felt extending one and one-half inches below the costal margin. The other abdominal viscera were normal.

Repeated examinations of the abdomen and of the stomach contents gave the same results, excepting that on one occasion a hard, smooth mass about the size of a walnut and very tender and not moving with respiration could be felt in the epigastrium. This was never again found.

Urine, 1020—normal. Blood, hemoglobin 60 per cent, histologically normal, no leucocytosis.

A provisional diagnosis of benignant pyloric stenosis, due to an ulcer scar, was made, and the patient kept in bed on a mild diet and with regular lavage.

For several weeks she did well under this treatment, but then went from bad to worse, and finally consented to an exploratory laparotomy.

The operation was performed by Dr. Tupper in the amphitheater of the Polyclinic. On opening the abdomen the stomach was found of the normal size, and the pylorus too, when brought into view, showed externally no abnormality. The gall-bladder was distended with bile and apparently normal. A small incision was made into the anterior wall of the stomach near its pyloric end; the surgeon's fingers, inserted into the pylorus, found no stenosis. On being pressed down farther into the duodenum, however, a hard mass could be felt just beyond the pylorus, and after some effort seventeen faceted gall-stones were brought into view and extracted. The gastric and abdominal wounds were then sutured. The patient made a nearly uninterrupted recovery and for several months was relieved from all her previous distress. Since then she has dropped out of sight.

This case is of interest for several reasons besides its rarity. The comparative frequency of pyloric stenosis, due to an ulcer scar, led us to interpret the patient's previous attacks of colic

as due to an ulcer, when an unprejudiced consideration of the history should have led us to the correct diagnosis. The mass of stones had evidently ulcerated from the gall-bladder into the wall of the duodenum and remaining there had caused a partial stenosis. It seems rather strange that while the stones were easily dislodged by the operator's fingers the violent peristaltic efforts of the stomach should have failed to dislodge them.

In my case the patient was observed and operated upon a comparatively short time after the formation of the stenosis, so that we found a great hypertrophy of the gastric walls without dilatation and with frequent vomiting. If the case had gone on without interference, we should next have had a dilatation with less frequent but more profuse vomit that would have shown a greater and greater degree of fermentation and decomposition. Finally, when then the dilatation had reached its maximum, the vomiting, as in excessive dilatation from other causes, would have ceased, we might even have had a lactic acid fermentation and the case might have closely resembled one of malignant pyloric stenosis.

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[2318 LAFAYETTE AVENUE.]

Tetanus Neonatorum : Report of a Case That Recovered.

By J. C. FALK, M.D.,

ST. LOUIS, MO.

Read before the Medical Society of City Hospital Alumni, April 4, 1901.

THE child, male, was born October 21, 1900, the attendant being a competent physician of this city. I was informed by the family that it was necessary to use the forceps in delivery; no especial difficulty seemed to have attended the birth, and there was only a slight abrasion on one side of the infant's head from the use of the forceps. The child was subsequently taken care of by an old lady, a relative, who dressed the navel daily with absorbent cotton and petrolatum. The navel separated on the fifth day.

Nothing out of the ordinary was noticed until the eighth day—October 29th, when in the forenoon the mother observed that the child could not nurse; thinking its mouth was sore she used some household remedies, but the condition growing worse, I was called in during that evening.

On my arrival I found the infant normally developed and fairly well nourished; it cried intermittently, the jaws were closed so as to admit only with some force the tip of my little finger; about every

fifteen minutes he had spasms, during which the fists were tightly clenched, hands flexed on the forearms, forearms on the arms and the latter drawn firmly against the chest; the lower limbs were similarly drawn together, the thighs being pulled up on the abdomen. I noticed no opisthotonos, although the family claimed to have seen the body straighten out and the head drawn back during some of the convulsive attacks; I noticed a marked emprosthotonos several times. During the spasms the child cried hard through the partly-closed mouth, the jaws at such times being noticeably pulled tighter and the angles of the mouth drawn out.

The extraneous surface was cool and moist, axillary temperature 98°F., pulse 160 and regular. Deglutition was almost impossible, fluids being sucked into the respiratory tract at every attempt. There was some suppuration at the navel but nothing unusual in its appearance. I gave one grain of calomel by the mouth, and ordered chloral, two grains, and potassium bromide, four grains, per rectum, every two hours, and left instructions for rectal feeding.

On the following day, October 30th, his temperature was 100°F. and spasms recurred every half hour. I increased the doses of chloral to four grains and the potassium bromide to eight grains every two hours.

October 31th, the temperature was 101°F., his condition the same as on the previous day, but the spasm seemed to be a little milder.

November 1st, rectal temperature 99°F., general condition about as yesterday; paroxysms still recur about every half hour. At 8 P.M. 10 cc. of antitetanic serum was injected at one time, the injection being made deep into the buttocks. The administration of the chloral and bromide was continued.

November 2d, rectal temperature normal. Mother says baby had a much better night; spasms are not coming so often (about every hour), the child having slept all of the intervals between attacks. Another 10 cc. of the serum was injected at 10 o'clock in the morning; the chloral and bromide being given per rectum every three hours.

November 3d, rectal temperature normal morning and evening; improvement marked; slept two hours at one time last night and three hours at another. He is now being fed with breast-milk from a spoon; swallowing is still difficult; opens mouth better and cramps are less severe, recurring at intervals of one to two hours. Injected 5 cc. of the serum at 10 o'clock in the morning and the same amount at 6 o'clock in the evening.

November 4th and 5th, slight improvement noticeable each day.

November 6th, rectal temperature 99°F. Swallows fairly well, but is still unable to nurse at the breast. Convulsive movements have ceased, there being only a slight stiffening of the muscles of mastication and occasional mild rigidity of the arms and legs. Gastro-intes-

tinal disturbances (vomiting and diarrhea) having appeared the chloral and bromide were discontinued and bismuth subnitrate administered.

November 8th, the baby sleeps well at times but whines and is restless the greater part of the day and night; rectal temperature 100°F.; spasms and rigidity of the muscles have ceased entirely. A bromine acne has developed on the face and upper part of the body.

November 10th, the child slept six hours at one time last night; vomiting and diarrhea have ceased; now nurses at the breast; temperature normal.

December 20th, the baby is gaining rapidly in weight and is in all respects a normal infant. This was evidently a case of tetanus of moderate severity, as on the second day there were already signs of improvement noticeable; the change for the better was much more marked after the serum had been administered and recovery subsequently progressed steadily.

It will be observed that the first two injections of serum were full ordinary adult doses of 10 cc. each.

[2700 STODDARD STREET.]

The Increasing Sterility of American Women.

By GEO. J. ENGELMANN, M.D.,
BOSTON, MASS.

*Read before the Gynecological Section of the American Medical Association,
St. Paul Meeting, June 4-7, 1901.*

Author's Abstract.

THIS investigation is based upon numbers which may seem small to admit of deductions as to conditions existing throughout a great country, but I feel justified in doing so as the data are exact and cases are carefully sifted, in addition, many details are corroborated to a decimal by independent observers in far-distant points, first and foremost by the census records of two great states,—by Dr. Wilbur, in the census of Michigan, and by Drs. Abbott and Kuszyński, in that of Massachusetts; by the careful observations of Dr. Chadwick, in Boston, and for the Eighteenth century by town records from Massachusetts communities. Certain data are

taken from each, as no one investigation covers all the points I have developed, and some have never before been presented, so that no record for comparison exists; all are indirectly corroborated by correlated facts. Whatever may be thought of the results obtained, the data presented certainly suffice to indicate the imperative need for further and more extended investigation in this direction.

The sterility of woman has increased, hand in hand with the much-discussed decrease of fecundity, everywhere to some extent but in the United States to an excessive degree, as fecundity has diminished more rapidly than in other countries—from a sterility of 2 per cent in the Eighteenth century and a fecundity of five children to the marriage, conditions better than in any other country and such as led to the Malthusian theory of super-fecundity, to the fear of over-population of the earth's surface, after a lapse of one century *from first* we have passed *to last* and the other extreme is now presented—*sterility greater* and *fecundity less* than that of the women of any other nation, unless it be of France, who for this reason must yield her proud position of one-time supremacy and retrograde to the rank of a second-class power.

Among the laboring class in St. Louis, 21 per cent of all marriages are sterile; 24 per cent among the higher classes; of foreigners, only 17 per cent; throughout the State of Massachusetts, Americans 20.2 per cent, foreigners 13.3, and in the city of Boston, the laboring class, American born, 23.1 per cent.

Among the laboring class, American-born, the fecundity in the Eighteenth century was five children to all marriages; at the beginning of the Nineteenth century, 4.5; it was at the end of that century 1.8 to 2. Two in Missouri, 1.8 in Michigan, 1.8 in Boston; somewhat more among American-born of foreign parentage, much more among foreigners; among the Irish 4.2 in St. Louis, 3 in Boston, 5 in Michigan; among the Germans 3.4 in St. Louis, 6 in Michigan, and in Massachusetts for all foreigners 4.9 children to the marriage. Fecundity somewhat less among the native American, also among the higher classes, least of all among college graduates, 1.6 children to the married couple; in England 1.5, whilst for the population at large it is 4.2.

I have called attention to the frequency of miscarriage and divorce as concomitants and causes of sterility, mainly to

INCREASE OF STERILITY, AND THE CORRELATED FACTORS OF FECUNDITY, MISCARRIAGE AND DIVORCE, IN THE UNITED STATES, 1800-1900.				
	Generally accepted average.	Most favorable conditions now existing.	American colonies in the 18th century.	United States at present and at close of 19th century.
Sterility. — Per cent of marriages childless.	11 per cent.	2.5 per cent.	2 per cent.	General average, 20 to 23 per cent; College graduates, 33 per cent.
Fecundity. — Number of children to each marriage.	4.5	French Canadian, 9; Kaluga district Russia, 7.2; Christiansia, 6.4.	4.5 to 6	General average, 1.8; College graduates, U.S. and England, 1.5.
Miscarriage. — Number of full-term labors to one abortion.	5.5	3.3 to 5.5	—	2.8
Divorce. — Number of marriages to one divorce.	—	Canada, 63,000; England, 11,600	—	United States, 1900, 185.5 to 195; Massachusetts, 18.7; Rhode Island, 8.2.

emphasize that barrenness is not due to physical causes, to pelvic disease amenable to local treatment, and that sterility is but too often the sequence to intentional miscarriage and the methods which precede it, the prevention of conception, both of which competent investigators have shown to be far too frequent.

Divorce in Canada 1 to 63,000 marriages, in England 1 to 11,600, in Germany 1 to 13,000, in France 1 to 12,500, in all the United States 1 to 185; in Massachusetts 1 to 18.8, Rhode Island 1 to 8.2.

Miscarriages are found in the proportion of 1 to 2.8 labors at term among Americans; 1 to 5.5 is the usually accepted standard. Among Americans of American parentage the frequency is somewhat greater, 1 to 2.7; among American-born of foreign parentage somewhat less, both in St. Louis and Boston, 1 to 3; among negroes worse.

There is an absolute and primary barrenness due to utero-ovarian disease, mainly to atresia, gonorrhea and to endometritis, with acrid discharge, destructive to the spermatozoa; this is here for the first time clearly distinguished from relative or secondary sterility, *i. e.*, conception and miscarriage; this primary sterility is much less frequent, 12 per cent among Americans, 10 to 11 per cent among foreigners, which, of course means relative sterility for Americans 9 to 12 per cent, for foreigners 3 to six per cent, showing that among American-born there is a much greater proportion of sterility, of childlessness, due to abortion; this may be due to disease or accidental traumatism, more often authorities say not. Much of the barrenness of women is intentional. All sterility in the American colonies was 2 per cent, in parts of Russia to-day 2.8 per cent, in Norway 2.5; hence primary sterility can certainly, in this country, not be over 8 per cent; 8 per cent of 20 to 23 of the childless, and even absolute, primary, (by barren marriages) sterility is, once in four or five cases, due to the male, showing that absolute sterility in woman is not common and that sterility is not mainly due to utero-ovarian disease; this, moreover, is evident from its rapid increase, hand in hand with the astounding progress of gynecological science, which we have every reason to believe would reduce the number of childless women to a minimum were sterility referable to tangible physical causes.

Sterility is a sad affliction for the innocent sufferer, and

for her our best efforts must be exerted; but if so rarely due to pelvic malformation and disease why do I present these thoughts to the Gynecological Section of a medical society? It is because the subject is a pertinent one to us as men, as physicians, if not as gynecologists; it is because we must seek to stay the progress of this abnormal state—because men and women are in ignorance of the suffering prone to follow willful and self-inflicted sterility; and it is this subject which claims a prominent chapter in the gynecology of the future, in preventive gynecology.

The death-rate of nations has steadily decreased in the last decade by the development of preventive medicine, and so may sterility decrease and birth-rate increase with the progress of preventive gynecology.

[208 BEACON STREET.]

Newspaper Rejects Medical Advertisements.—According to *American Medicine*, the *Philadelphia Times*, one of the leading daily papers of that city has decided to refuse for publication the advertisements of medical quacks and other frauds. The paper in question states its intentions as follows: "It is not hard to draw the line. The *Times* has drawn a line that it never allows to be passed. It refuses to insert, at any price, though they are repeatedly offered, all advertisements of "diseases of men," "female remedies," "guaranteed cures," and such like indecencies, and of massage, clairvoyance and other cloaks for vice. It equally refuses advertisements which promise something for nothing, that guarantee big dividends or otherwise lure the reader to questionable investments. And it absolutely rejects all objectionable displays and the huge illustrations in advertisements that are offensive to good taste and common decency."

We commend the management of the *Times* for the stand they have taken and hope their example will find imitators among their fellow members of the lay press.

EDITORIAL.

IS STERILITY INCREASING AMONG AMERICAN WOMEN?

Engelmann brings a grave charge against the women of America. But the accusation of a lack of the maternal instinct and of having a desire to shun the duties of motherhood is one which will be strongly refuted by thousands of American mothers were an opportunity given them to do so ; mothers who have and who are still giving birth and nurture to the greatest race of people that the world has ever seen ; mothers who have made the American nation what it is and who, through this agency, will dominate the destinies of the nations of the Earth, for the time is not far distant when it can be said in truth of the American mother that the hand that rocks the cradle rules the world.

The maternal instinct is the latent but all-pervading power that dominates and regulates the female organism from the cradle to the grave. Unchanged by evolution, unaltered by education and surroundings, repressed but not subdued by the restrictions of society, woman yearns unceasingly, and often, like Rachel, in despair, for the fulfillment of this natural and principal function for which she is created, although she travaileth in sorrow in accordance with the Divine behest.

The American mother represents the highest type of perfected womanhood and as such is amenable to Nature's laws to the full measure of their exactions. That she seeks to great extent to avoid this the chief aim of her maker we are loathe to believe.

Engelmann's statistics are startling. But their import is weakened by their paucity. They are too few in number to prove with any degree of positiveness the correctness of his appalling statement. A careful digest of the figures of the last census for the entire country regarding the number of births during the decade and an estimate of their proportion to the total number of married women is necessary in order to form a correct basis for estimation, instead of that of a few isolated communities.

The proportionate extent of sterility from disease is not greater in America than in other countries and considering the skill of American gynecologic surgeons should be less. The demands of society and the difficulties which are met with in a struggle for existence may, in certain localities, cause a diminution or lead to an intentional sterility on the part of women, but doubtless the general average still continues.

We do not find an overproduction the animal kingdom in Nature where they are untrammelled by the restrictions of man, and it appears reasonable to believe that provision has been made by the Almighty to prevent overpopulation of the human race. Doubtless in the process of evolution and as the population of the world grows denser there will be a gradual diminution in the number of the offspring until a period in the world's existence will be reached when there will be but two children in each family—a male and a female. But it is hardly probable that such a condition has been reached in America or that it is in accordance with the Divine plan to restrict the growth in population by intentional sterility.

If subsequent investigations prove the accuracy of Engelmann's deductions we will wrest from France the unfortunate distinction of being the least prolific of all of the Earth's peoples, a condition which, manifestly, we have not yet reached and an honor (?) which we have not yet earned.

ALCOHOLISM AMONG WOMEN.

There is a growing tendency among women to the indulgence in alcoholic beverages. Among the wealthier and higher classes the habit has become almost universal; and this pernicious example has rapidly extended through the various social substrata, for it is human nature to imitate the actions of those who are better favored, and a bad example, like bad news, travels fast.

The exhausting effects of the demands of society upon its devotees creates a desire for a stimulant and hence the ever-present and generous punch-bowl is often the most popular feature of the social event. It adds a sparkle to the eye, color to the cheek, and a zest to the spirit of the maid and matron, a delightful feeling of *biên aise*, and its alluring seductiveness bids its partakers to return again and again. Many

a young woman, ignorant of the taste and effects of alcoholic stimulants, has first been brought to a knowledge of its allurements at the social gathering around the punch-bowl. Once a taste, it becomes a difficult matter for women to refuse, should she desire, when offered to her in a new and tempting form, until soon an alcoholic stimulant is essential to her neurotic constitution and the daily potion becomes a fixed habit.

A spirit of recklessness in young women to imitate in secret this vice of the male sex is not infrequently a cause for the beginning of alcoholic indulgence and for the continuance of which opportunities are easily obtainable. So prevalent indeed has it become that there are but few young women of the better classes in the cities who are not familiar with the taste and effects of alcoholic stimulants, and too frequently the so-called attacks of nervous prostration among women are but the after-effects of alcoholic indulgences.

Among the less favored classes the causes that obtain among the wealthy operate necessarily to a smaller extent, but here other conditions act no less powerfully as causative agencies in the formation of the habit. In England the habit of alcoholic indulgence among women of the lower classes is much greater than in America. It is stated that in the epidemic of arsenical poisoning, which occurred last winter in Manchester, England, and its vicinity among beer drinkers, the majority of the victims were women. Dr. Heywood Smith, of London, gives as reasons for alcoholism among women, the increasing independence of women—a liberty which some of them interpret as license for self-indulgence in accordance with their inclinations. In the struggle for life, which this independence engenders, there is often the element of failure or overstrain, and women, too weak in many instances to bear the strain, resort to stimulants. The cares, worries, and anxieties regarding the home and children, and when especially to this may be added a husband's neglect or the brutality of a husband who drinks, often cause women to seek forgetfulness in the stimulating effects of some alcoholic beverage.

Whatever be the cause, women seldom have the power to resist its temptation when once they become a victim to its use, but woman-like plunge headlong to excess. In the reformatories for criminal inebriates in England there are five times as many women as men, according to Heywood Smith.

Men drink in company for sociability sake, but women rather in

secret, which makes detection difficult at an early period. Often the family physician is called to relieve a distressed condition of the head or digestive organs, or possibly a sudden attack of nervousness in some of the female members of his most respectable families, and in response to the question of the fair patient, diplomatically gives some impossible condition as the probable cause.

The life-history of the female inebriate is identical with that of the male, the only difference being that with a more rapid loss of self-control she passes quickly to the depths of degradation and thus earlier reaches the end.

PURE WATER FOR ST. LOUIS.

In accordance with an appropriation for that purpose by the Municipal Assembly, the Mayor of the city of St. Louis on July 25th appointed a Commission of Hydraulic Engineers for the purpose of investigating the needs of the water supply of the city and to devise a plan for its purification. The Commission consists of Allen Hazen, of New York City, George Y. Wismer, of Detroit, Mich., and Benezette Williams, of Chicago. Mr. Hazen, according to reports, will in all probability be made Chairman of the Commission, as he has had an extensive experience in the construction of municipal filtration plants.

The extraordinarily large amount of foreign matter in the water of the Mississippi River, upon which the city of St. Louis is dependent for its supply, renders its purification one of unusual difficulty and complexity. To the marked turbidity caused by the waters of the Missouri River is added the pollution from the sewage of the towns situated in the territories drained by the various tributaries of the Mississippi which empty into that stream above St. Louis.

That the water supply of this city is more or less contaminated by the sewage from other cities, is shown by the marked increase in the number of cases of typhoid fever that has been reported to the local Board of Health since the opening of the Chicago drainage canal. According to the report of the Health Commissioner of the city of St. Louis, which has just been issued, there were in the year 1896, 281 cases of typhoid fever reported; in 1897, 464 cases; in 1898, 404 cases; while in 1899, the year in which the drainage canal at Chicago was opened, there were 1,114 cases, and in the course of the year that

has just ended, according to the records of the Health Department, there were 1,160 cases reported. The Health Commissioner estimates that there were possibly a third more in addition to the number of cases recorded which were never reported to the Health Department and which would make, if his supposition is correct, a total of about 1500 cases of typhoid fever in St. Louis during the past twelve months.

The questions of sewage disposal and the protection and purification of the water supply of thickly populated communities is one that will demand attention from the Federal government, either through legislative enactment or as one of the duties of the Marine Hospital corps, for the inhabitants must be protected from harmful conditions which originate from within as well as those from without, when the cause of trouble lies beyond the jurisdiction of the State wherein the injury is inflicted.

That the city of St. Louis is not an isolated example of the injury caused by the contamination of the water supply by sewage is evidenced by the following editorial, which appeared in the *Medical News* (New York), April 14, 1901, under the caption, "Water Ways and Contagious Diseases."

"The inauguration of a suit in chancery about to be brought by the Passaic Valley Protection Association for the monumental sum of \$10,000,000 against the city of Paterson, N. J., calls attention to an important sanitary problem and to its medico-legal aspect.

"For years the city of Paterson has been dumping its sewage, without modification, into the Passaic River where it has been carried to many towns below it and there given rise to numerous cases of typhoid fever. The citizens living along the banks have therefore made themselves into an association for mutual protection, and, by claiming extensive damages, hope to be able to compel the city of Paterson to take proper care of its sewage.

"It would appear that in this enlightened era of sanitary science and humanitarian doctrines it should not be necessary to resort to legal means to compel a city to protect its neighbors, but corporations are said to be lacking in consciences and municipalities may need the sting of heavy damages to pay in order to compel them to make concession to the rights of others.

"We commend the Passaic Valley Protection Association in their action and trust that in the righting of their wrongs, others suffering similarly may profit."

As soon as the Engineers' Commission reports an adequate and feasible method of water purification for the city, steps will be taken without delay to install a plant for that purpose. From a sanitary as well as from a domestic and commercial point of view the need of pure water for the city of St. Louis is urgent.

THE VIABILITY OF THE PEST BACILLUS.

The tendency of the bubonic plague to spread to the various parts of the world by following the paths of commerce, and the discovery within the past few years of the causative agency of this disease have placed it in the forefront of the stage of scientific research. The mode of transmission of this disease has been more or less completely worked out, and upon animals of the rodent class, particularly rats and mice, have been placed the onus of its dissemination.

The viability of this organism and its tenacity to life under different conditions have not until recently been fully determined. This is doubtless one factor that has rendered it difficult to completely eradicate it when it has once obtained a foothold, as is observed in San Francisco, where its outbreak recurs after a longer or shorter period of quiescence. The inability also to completely control other conditions which likewise are necessary to its entire removal are also causes of failure in attempts to check its progress.

Rosenau, of the United States Marine Hospital Service, has made a thorough and extended series of observations for the purpose of determining the viability of the pest bacillus under varying conditions. The organisms for experimental purposes were obtained from the following centers of infection: Djiddah, Oporto, Rio de Janeiro, Bombay, the New York Quarantine case, Glasgow, and San Francisco.

Rosenau found that the bacillus pestis is not a frail organism. It resembles the hemorrhagic septicemic group or the cocco-bacillus as far as its viability is concerned. Temperature is the most important factor in the viability of the plague bacillus. It keeps alive in the cold, under 19° C., a very long time. It dies quickly, especially when dried, at the body temperature, 37° C. Moisture favors the life of the bacillus pestis. It usually dies in a few days when dry, even in the presence of albuminous matter, provided the temperature is above 30° C. It

may keep alive and virulent when dry for months in the cold under 19°C . Sunlight kills the organism within a few hours, provided the sun shines directly upon the organism and the temperature in the sun is over 30°C . The effect of sunlight is not very penetrating. The virulence of the bacillus pestis is often lost before its vegetability.

It is unlikely that new dry merchandise would carry the infection. The organism usually dies in a few days on the surface of objects such as wood, sawdust, bone, paper, etc. Clothing and bedding can harbor the infection for a long time and may act as fomites. The bacillus lives for months when dry in albuminous media at temperatures under 20°C . Food products may carry the infection of plague. The bacillus lives a long time in milk, cheese, and butter. It usually dies quickly on the surface of fruits and prepared foods. The organism may live a long time in water, although plague is not a water-borne disease. The plague bacillus does not live long on paper, and first class mail is therefore not apt to convey the infection. The colder the climate the greater the danger of conveying the infection on fomites—clothing, bedding, food, merchandise, etc.—and more extensive disinfection is required in such a climate in combatting the disease than in tropical regions.

The plague bacillus is destroyed by sulphur fumigation and by formaldehyde gas in the strengths in which these disinfectants are usually employed. The gases can only be depended upon as surface disinfectants. In disinfecting ships, warehouses, dwellings, and other places infested with rats, fleas, and vermin, sulphur is better than formaldehyde, because formaldehyde gas fails to kill the higher forms of animal life. A temperature of 70°C . continued a short time is invariably fatal for the plague bacillus. The ordinary antiseptics are all efficacious in their usual strength for nonspore-bearing organisms. Efficient surface disinfection may be accomplished by exposing objects all day to the direct sunshine on warm days. The temperature in the sun must be above 30°C .

Rosenau's investigations furnish a large increase in the knowledge of the life conditions of this organism and will have a direct bearing upon the quarantine regulations in force against commodities from an infected locality and will likewise give a new direction to the methods at present used for checking the spread of this disease.

FOREIGN CORRESPONDENCE.

OBSTETRICAL PROGRESS IN THE NETHERLANDS.

The Artificial Dilatation of the Os Uteri.

P. van Oordt, of Amsterdam, indorses the new method of Bonnaire for the dilatation of the uterus during confinement, which Treub introduced and has repeatedly performed in the Netherlands.

He reviews more or less fully the various instrumental methods of rapidly dilating the cervix in those cases where rapid delivery is indicated, mentioning particularly the balloons of Champetier de Ribes, the kolpeurynter of Braun, the metreunyster of Barnes, the ecarteur of Tarnier, with a description, the method of application and the objections or faults of each.

Manual dilatation of the uterus was first suggested by Louise Bourgeois in 1658, but there has been various modifications of her method by others since that time. In all of these, however, the dilatation is accomplished by the use of one hand but quicker and easier results can be obtained from the use of both hands after the method of Bonnaire as modified by van Oordt. The two forefingers are first passed into the vagina and hooked into the cervix which is stretched by making traction in opposite directions; this is continued until the cervix is dilated sufficient to allow the entrance of the two second fingers and then the ring fingers are added to the others, the traction being thus continued until dilatation is complete. Van Oordt claims that less exertion is required when the hands are crossed; it is possible by this means to dilate the cervix in a few minutes. According to Treub the conditions under which this method is especially applicable are the following:

1. Prolapsus funiculi in the case of a living child.
2. Bleeding after a partial detachment of a marginally situated placenta; after a premature detachment of a normally situated placenta, and in cases of placenta previa. In such cases there is more

chance of extracting a living child, and less likelihood of tearing the congested cervical tissue.

3. Eclampsia. This method has given excellent results under these conditions.

The Results from Artificial Premature Delivery During the Past Twenty Years in the Netherlands.

A. Beyerman has collected 339 cases of artificial premature delivery that has occurred within the last twenty years in the Netherlands. The indications for premature delivery in these cases were as follows:

- (a) Pelvic contraction in 323 cases.
- (b) Vaginal stenosis in 3 cases.
- (c) Abnormally increased size of child in 3 cases.
- (d) Surgical repair of the perineum in 1 case.
- (e) Because of difficult former labors in 2 cases.
- (f) Experimental (Veit.) in 7 cases.

As a result of these 339 artificial premature deliveries were born 340 children, of whom 108, or 31.7 per cent, were stillborn or died soon after birth. The mortality of the remaining children during the first year was—among those of poor parents, 40.5 per cent; those whose parents were in better circumstances, 31.5 per cent; while the mortality for the first year of children born at term, in the Netherlands, is 22 per cent. The infant, therefore, born as a result of artificial premature delivery is in 31.7 per cent of the cases stillborn, and the living child has in the first year but half the chance, which a child born at term, has to reach its second year. This very striking result of an operation which has been done especially to save the child, when compared with the opinions which have frequently been expressed upon this subject, has been the reason why Cesarean section has been performed more and more frequently in the Netherlands in such cases. While it is true that the mortality of the mother from Cesarean section is still about 10 per cent as against that of 1 per cent in cases of artificial premature delivery (as estimated by Beyerman from his series of 339 cases), the mortality of the child is reduced from the highest number with artificial premature delivery to 8.8 per cent (Beyerman) with Cesarean section.

Amsterdam.

VAN DER HOEVEN.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of April 4, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. J. C. FALK read a paper (see page 116 of this number) entitled

Tetanus Neonatorum.

DISCUSSION.

DR. H. S. CROSSEN thought that the serum treatment was not used as frequently as it ought to be, not only in this class of cases, but in all forms of tetanus. He said he would like to hear from Dr. Ravold what effect had been obtained recently in the treatment of tetanus by serum. He was particularly interested in the report read this evening, because he had treated a case of tetanus not long ago. It was that of a small boy who had received a wound of the foot and several days after began to have trouble in masticating his food. The family supposed it was sore throat and paid no attention to the symptom. A day or two later, however, in the middle of the night, the child had a choking spell, and the speaker was telephoned for. He found a clear case of tetanus. The wound was almost healed. He excised the granulating area and the infiltrated tissue down to the healthy tissue, and in the morning used the serum; in all he gave the boy three or four injections. He also used morphine, chloral, and the bromides, but attributed his success very largely to the use of the serum. The attack was not very severe. He had, however, seen cases in such a stage progress and become very severe.

DR. F. G. NIFONG was an ardent advocate of serum therapeutics. His experience was limited to the use of diphtheria antitoxin and anti-streptococcus serum and on the use of the former he had made some reports to this Society. He thought that even a limited number of favorable reports on the use of antitetanus serum would greatly strengthen the position of the serum therapist. In a condition so

uniformly fatal some good reports would make unanswerable argument.

DR. N. SAENGER spoke of the case of a boy who had received a gunshot wound of the hand. The patient was not seen by him until about ten days later. The symptoms of tetanus had then commenced. He immediately dressed the wound antiseptically, though it did not show much inflammation, and administered the antiseptic serum; in all, three or four bottles were used. On the third day the patient died. He believed there might have been a different result had the serum been used early in this case. He felt confident that it is of great value when used early, but in neglected cases it does not seem to be of much benefit.

DR. R. B. H. GRADWOHL said the result in this case was encouraging. The cases he had seen in the City Hospital were nearly all failures. He had also seen the serum used in one case, very early in the attack, in Germany, which also failed. The experience of most men in that country was that the serum was not as much of a success as it had been hoped it would be. In France the best results had been achieved with serum-therapy. Beyond question the serum, to be of benefit, must be used early in the disease. The toxin is so virulent that no relief can be hoped for if the injection is delayed. In the case reported this evening the medication afforded some relief, as there was some betterment before the serum was injected. He thought that the intracranial injection of the serum was too heroic a measure to be useful.

DR. H. W. SOPER thought the case a very mild one. A case reported by Dr. Runge some years ago was treated with large doses of chloral and bromide—to almost a toxic degree. Very soon after that report the speaker saw a case of tetanus and adopted the same method of treatment. It was a mild case, running much the same course as that described by Dr. Falk, and the child recovered in about the same way. He would not say whether the serum had much effect or not. Dr. Falk compelled his patient to rest as much as possible, but in his case the speaker said this was not possible. Nourishment was given in frequent doses of small amounts of milk and this had been administered a few drops at a time so that it trickled down the esophagus. Another case was seen at the City Hospital. A boy had his foot badly crushed by a car. Two weeks later he developed tetanus and had violent convulsions every day. Everything was tried, including large

doses of arsenic, but the patient finally died. The temperature ranged from 103° to 106° F.

DR. AMAND RAVOLD was very much interested in the case reported by Dr. Falk, and was of the opinion that Dr. J. Friedman had reported one or two cases of the disease in infants, which had recovered with antitoxin treatment. In regard to the bacillus, he felt certain that it had been established beyond a shadow of a doubt that the tetanus bacillus is the etiological factor in the causation of the disease, and that without the tetanus bacillus, no true tetanus. In the discussion the fact seems to have been lost sight of—that there are all degrees of virulence in the bacillus, as well as there are varying degrees of susceptibility in the individual; the child possessing less resistance than the adult. In his opinion the disease might be divided into three classes:

First, cases in which the period of incubation is of long duration (over nine days) before trismus occurred and in which the symptoms were mild, the jaws but slightly locked, and the spasms and convulsions wide apart. Cases of this class almost invariably recover without treatment.

Secondly, cases in which the period of incubation is less than eight days with a rapid onset of the symptoms, or those of a long period of incubation and a very rapid onset of symptoms. Cases of this class are benefited by any treatment which assures sleep (for there are no convulsions during sleep) and causes long intervals between the convulsions. Here cleansing of the wound, quiet, hygienic measures, and such drugs as chloral, bromides, morphine, arsenic and antimony save fully fifty per cent of the cases, while recent statistics seem to show a decided improvement in this class of cases when antitoxin is used in conjunction with other drugs.

The third class of cases have a short period of incubation, less than four days, with a frightfully rapid onset of symptoms. This class of cases are hopeless under any treatment and invariably die within forty-eight hours after the first symptoms occur.

The reason why tetanus antitoxin is of so little value in the disease is that it is administered too late, and this is on account of the nature of the disease, as a diagnosis of it can not be made until the spasms and convulsions characteristic of the malady occur, and the interval of time during which the tetanus toxins have been poisonous

—the cells of the central nervous system—is so great that they are injured beyond repair. The real value of tetanus antitoxin is as a prophylactic remedy, administered to patients who have received grave surgical injuries in which dirt has been driven into the wound, and in penetrating wounds made with unclean weapons. In this class of cases tetanus antitoxin will immunize patients against the disease with almost absolute certainty, and as it is a harmless remedy, should be fearlessly administered when indications demand it.

The tissues about the wound should always be excised, otherwise the bacilli in the wound would continue to manufacturing toxins which would float in the blood-stream and injure additional nerve cells.

The dosage should not be less than 25 cc. (preferably 50 cc.) of antitoxin of the highest potency. Intracranial injections had been introduced as the results of Roux's experiments upon animals, and so far as the literature was available of its use in man, the results were not very satisfactory.

DR. P. J. HEUER said the intracranial method had been tried in several cases in St. Louis with fatal results in all. The injections were made after trephining and large doses were given but without apparent effect.

DR. F. REDER said that the success of the toxin lay in its early use. He spoke of the case of a man who stepped on a nail. The nail entered the heel of the left foot about half an inch. Three hours later he came to the speaker complaining of inability to open his mouth. He also complained of feeling sick. The speaker incised the wound freely and put on a moist dressing. By morning all the disagreeable symptoms had subsided. He believed tetanus would have developed in this case had not the incisions been made.

DR. RAVOLD, in answer to a number of questions, said that it took quite a number of hours for tetanus bacilli when sown into a wound to produce toxins, and secondly, some hours would elapse before symptoms of the poisoning manifested themselves. For instance, the deadly mineral poisons, when administered in lethal doses to an animal, kill it rapidly and dramatically, but tetanus toxin, when injected into an animal, acted differently. The animal after receiving the injections remains apparently uninjured for from twelve to twenty-four hours, when gradually the spasms begin and the animal dies in convulsions. The toxin is none the less deadly, but slower in its action; in fact, tetanus

toxin is the most deadly poison known to man. It is, therefore, so absolutely essential that in all cases of tetanus the wound be thoroughly curetted and disinfected with powerful disinfectants. He asked Dr. Reder if the man treated by him was not hysterical.

DR. REDER said that he was not certain that this was an attack of tetanus but feared it might develop.

DR. FALK, in closing, said this was the third case of tetanus neonatorum he had seen, the two other cases resulting fatally. In none of the cases was he the attendant during confinement, nor had he seen the patients previous to the development of tetanus.

As to the time intervening between the administration of the first dose of antitoxin and signs of improvement, he stated in the paper that there were evidences of mitigation of the symptoms before the antitoxin was given. While the symptoms of tetanus were unmistakable, they were mild. Fairly good doses of bromide of potassium and chloral were given from the beginning. The first symptoms were noticed in the forenoon of the eighth day of the child's life. Within eight hours of that time he saw the child for the first time and he gave the bromide and chloral per rectum at once. The symptoms continued about the same until the next day, when the dose of this medicine was doubled. This was continued until the following morning; then the first dose of serum was given, but the symptoms had already diminished in severity. He gave a full dose of the antitoxin—10 cc.; about twelve or fourteen hours later he gave the second dose of the same amount, and on the third day the child received 10 cc. in two injections.

His object in reporting the case was not to make claim of a case of tetanus having recovered because of the use of the antitoxin, but simply to report a case of tetanus in the new-born that did recover.

He agreed with Dr. Ravold, that where there is an infecting focus in tetanus, that focus ought to be removed if possible; the wound should be incised and thoroughly cleansed. This is the point where the germs and toxins are developed, and while some may have entered the circulation, we can prevent further absorption of the supply by cutting off the source.

REPORTS ON PROGRESS

MEDICINE AND THERAPEUTICS.

The Juvenile Form of Progressive Paralysis.

According to Dr. Josef Hirschl, of Vienna, Assistant in Prof. Krafft-Ebing's Clinic (*Wiener klin. Woch.*, May 23, 1901) juvenile paresis is usually defined as that beginning before the twentieth year. More properly, it is a form developing on a basis of hereditary lues, as distinguished from that of acquired lues.

Of twenty cases observed in this clinic in ten years, the presence of congenital syphilis was established in seventeen. In the remaining three a complete history could not be obtained.

A neuropathic predisposition was evident in many of the cases. A history of organic nervous disease in ascendants was obtained in a number of instances. Nine of the patients were decidedly degenerate.

The age of onset varied from the eighth to the twentieth year. In ten cases it was between the fourteenth and sixteenth, indicating a causal relation between the development of puberty and the onset of the disease.

The somatic symptoms were striking. In the early stages, cerebral congestion with severe headache and vomiting, apoplectiform and epileptiform seizures; ordinarily some eye symptoms, as pupils fixed to light, ptosis, optic atrophy. The patellar reflex was increased. There were motor irritability, tremor and choreiform movements.

With the progress of the disease paralysis and contractures developed, and a progressive failure of nutrition.

The psychic symptoms consisted in loss of memory and natural affection, changes of disposition, irritability, passing gradually into complete dementia.

Maniacal or hypochondriacal states were not observed in any of these cases.

The average duration of the disease was three and three-quarter years; the longest seven years.

The following points of contrast with adult paresis occur:

1. Congenital lues as the cause of juvenile paresis.
2. Early age at onset.
3. The frequency of stigmata of degeneracy in the subjects.
4. The prominence of characteristic symptoms during the prodromal period.
5. The fact that after the full development of the disease, the mental change usually consists in a simple dementia, without the occurrence of maniacal or hypochondriacal states.
6. The relatively long duration of the disease.
7. The post-mortem findings, consisting in a diffuse cerebral sclerosis with pronounced lepto-meningitis.

The Clinical Diagnosis of Renal Infarcts and Renal Colic.

Rudolph Schmidt, of Vienna, (*Wiener klin. Woch.*, May 9 and 16, 1901) reviews the histories of a number of cases and concludes:

1. In every case of renal colic it should be determined whether the cause is intra-renal, due to disease of the kidney itself, or extra-renal—that is, ureteral, and due to obstruction of the canal.
2. Pain of intra-renal origin is usually limited to the region of the kidney. With renal infarct the pain is continuous, and the kidney especially sensitive to pressure, and there is an intense albuminuria or a nephritic sediment, often of sudden occurrence.
3. Pain of extra-renal, that is, of ureteral origin, is more intermittent, and has a greater tendency to extend along the course of the ureter, over which there is tenderness on pressure. Acute hydro-nephrosis may occur.
4. Renal colic of intrarenal origin may be produced by (*a*) torsion of the renal blood-vessels, as in floating kidney; (*b*) sudden congestion of a vascular malignant tumor; (*c*) chronic nephritis, with acute exacerbation; (*d*) renal infarcts.

Pain on pressure is more often present in *d* than in *c*. High pulse tension speaks against *d*. Onset of the attack while lying in bed is frequent in *d*. *a* and *c* frequently follow mechanical injury. Sudden onset in full intensity is especially characteristic of *d*. Marked hematuria is frequent in *c*, rare in *d*.

6. Lying on the side of the sound kidney increases the pain in cases of renal infarct.

7. With total occlusion of the renal artery there may be absence of urinary symptoms.

8. Oliguria occurs especially with bilateral infarction.

Typhoid Fever and Pharyngeal Diphtheria.

Morris Manges (*American Medicine*, June 1, 1901) calls attention to the occasional occurrence of diphtheria as a complication of typhoid fever and gives histories of several cases. It is important that it should be recognized and properly treated when present, since it greatly increases the gravity of the situation, to say nothing of the danger of infecting others.

Rigidity of the Spine.

Max C. Bochroch (*Ibid.*) reports a case of this disease occurring in a physician, aged 25 years. Two forms are described; one in which the rigidity is limited to the spine, often to the cervical region. In this the anatomical findings are chronic leptomeningitis, with root and cord changes; the vertebral joints are not affected.

In the second form there is rigidity of the spine and also involvement of the hip and shoulder joints. The anatomical findings are, absence of root and cord changes, but ossification of the ligaments and ankylosis and hypotrophy of the joints.

He places his case in the second class, which he thinks is merely a form of chronic rheumatoid arthritis.

Pulsation of the Uvula in Aortic Insufficiency.

David Riesman (*Ibid.*) reports two cases in which this phenomenon occurred. Its significance is the same as that of the capillary pulse.

Gaylord's Protozoon of Cancer.

H. R. Gaylord (*American Journal of the Medical Sciences*, May, 1901,) gives a preliminary report of the results of his investigation of the parasitology of cancer.

He reviews the work done in this field by other investigators, and rejects as the specific micro-organism the yeast-like bodies, but thinks he has discovered it in an ameboid protozoon which is found in great numbers infiltrating the tumor and largely composing the so-called "cancer milk" and substance of a mushy consistence found in

certain adeno-carcinomata. The organisms being so numerous have naturally been observed before, but have been interpreted as fat-droplets, which they resemble, but that they are not fat is shown by the fact that they do not respond to the chemical tests for this substance.

Gaylord has not succeeded in cultivating the organism, but has observed it to increase in number in cancerous tissue for twenty-four to forty-eight hours after removal from the body, and he has with apparent success inoculated lower animals, tumors resulting which conform histologically to cancer, and which contain the same organism.

While it is yet too early to pronounce definitely upon the value of Dr. Gaylord's observations, they are certainly of great interest and indicate that we may at least hope for an early solution of the problem of the etiology of malignant neoplasms.

Syphilitic Fever.

According to Fitcher (*New York Medical Journal*, June 22, 1901,) syphilitic fever occurs at various periods during the course of the infection:

1. It may occur, in very rare instances, as long as three or four weeks before the onset of the secondary skin eruption; the early fever is puzzling, and is likely to be attributed to some other cause until the eruption occurs.

2. It may precede or accompany the appearance of the secondary eruption. This is the common, so called "fever of invasion."

3. The fever may occur at any time during the course of the secondary or tertiary stages. He reports one case in which it occurred twenty nine years after the disease was contracted.

The fever of invasion, as well as that associated with late manifestations may conform to any one of the following three clinical types:

1. A mild, continuous pyrexia, where the temperature ranges in the neighborhood of 101°F.

2. A remittent type, with morning decline and evening exacerbation.

3. A definite intermittent type.

The febrile conditions for which syphilitic fever is often mistaken, are malarial fever, typhoid fever, tuberculosis, sepsis and rheumatism.

In all cases of fever of obscure origin, the possibility of its being

syphilitic should be borne in mind, and careful examination made for evidences of this infection

Inguinal Bubo as a Complication of Malarial Fever.

A. C. Smith (*Ibid*) reports a number of cases in which malarial infection seemed to be the exciting cause of inguinal bubo.

The Use of Santonin in Tabes and Epilepsy.

C. Negro, of Turin, (*Philadelphia Medical Journal*, April 27, 1901) finds santonin very effective in abolishing the painful crisis of tabes when given in divided doses to the amount of 15 centigrams a day. Dr. Lydston has given the same drug in epilepsy, giving a dose of 2 grains, which is gradually increased as tolerated up to 15 grains, two or three times a day. He thinks the results much more favorable than those of the bromides.

HOGG.

NEUROLOGY.

Leucocytes in the Cerebro-Spinal Fluid in General Progressive Paralysis.

MM. Brissaud and Monod (*L'Indépendance Médical*, March 20, 1901,) report the case of a patient in whom the diagnosis of general progressive paralysis was doubtful, but was confirmed by the great number of leucocytes observed in the cerebro spinal fluid.

Spinal Anesthesia in the Treatment of Sciatica, Tabetic Crises, Etc.

M. Achard (*Ibid*) found intra-spinal injections of cocaine in obstinate sciatica, tabetic crises and herpes zoster, to give relief from pain, not only during the anesthesia, but for some hours after, and favorably affect the progress of the disease. A dose of 1 centigramme should not be exceeded.

Cancer of the Peripheral Nerves.

M. Oberthür (*Ibid*) reports three cases of cancerous infiltration of the peripheral nerves. The symptoms were those of a peripheral neuritis, and histological examination showed the nerve-trunks compressed and partially degenerated.

The author considers that cancer of the lung is especially apt to become generalized.

HOGG.

OBSTETRICS AND GYNECOLOGY.

The Determination of the Presence of the Cord Around the Neck of the Child During the Expulsive Stage of Labor.

Dickinson, of Brooklyn, (*Medical Record*, July 27, 1901,) calls attention to the fact that the presence of the cord around the neck of the child can be determined when the occiput is beginning to protrude at the vulva, by passing a finger in at the summit of the arch of the pubis between pains. The dorsum of the finger is pressed against the child's head, the tip hugging the occiput closely until the shoulder or nucha is reached. A soft band will always be found around the neck of the child which is either the rim of the cervix or the cord. Hooking the band gently toward the pubes it is held against the back of the bone to see whether or not it pulsates, if not, the finger hooks over the band more firmly, by which means can be decided the nature of the substance thus felt. The gentlest manipulation is always in order. It is common to find the pulsations of the cord slow down and stop during a pain but which are gradually resumed as the pain passes away.

Fetal Malformations, the Stigmata of Degeneration and not the Results of Maternal Impressions.

Woodruff, of the United States Army, (*American Medicine*, July 27, 1901) is of the opinion that fetal malformations which are frequently claimed to be the result of maternal impressions are in reality stigmata of degeneration. That they are the results of the inheritance of morbid traits and tendencies of the progenitors of the infant, for many generations, and which may be influenced by certain habits or conditions present in one or both of its parents, such as alcoholic indulgence, early syphilis, the toxins of tuberculosis and other toxins, defective nutrition and mechanical interference with intrauterine growth. He believes that heredity plays a most prominent part in the formation of the physical defects of the fetus and states that it is a fact that degenerates are usually derived from degenerate parents, for it is

an abnormal condition of nervous instability which tends to grow worse from generation to generation until elimination occurs through sterility or the production of nonviable offspring. It is extremely probable that the ovum always tend to seek the normal and would do so if it were only permitted, but that it is an unstable organism easily diverted from the developmental groove worn smooth and deep by millions of ancestors. It follows the biologic law of inertia or the tendency to repeat the development of all its ancestors and not necessarily the last two or three, a tendency of such tremendous power that normal ova of all living things will develop properly in spite of very adverse environment. Heredity is derived from millions of ancestors, the parents and grandparents only adding a trifle to it, and by this law of inertia structures are developed for hundreds of generations after they have ceased to be of use. Hence the ova of degenerate parents do not inherit so much from the last few ancestors as was once thought, and if the infants are not already too much damaged at the time of birth, they can be caused to develop into normal men, as a rule, by proper nourishment in a proper environment. Were it not for the law of inertia there would be no hope of regeneration or the return of family lines to the normal after a generation or two of abnormality—a fact so well known as to need no illustration.

The Treatment of Myoma Uteri.

Montgomery, of Philadelphia, (*Journal of the American Medical Association*, July 20, 1901) finds that the only one of the animal extracts capable of producing any beneficial effects on uterine myomata is that derived from the thyroid gland. This agent appears to exert a special influence upon the epithelium of the uterine mucous membrane, which promotes the arrest of hemorrhage and decreases pain. These effects are found in the carcinomatous as well as the myomatous uterus, but not every patient is able to take the drug in sufficient doses to exert a beneficial influence upon the growth. Much of the benefit imputed to these drugs is doubtless due to suggestion, as is likewise that of electricity, and electricity is not to be advised when the condition of the patient's health would permit of surgical measures.

Small uterine myomata, which do not give rise to symptoms are subperitoneal or interstitial and may be permitted to go untreated, but the patient should be kept under observation and any increase in size

should indicate operation, as continuous growth may result in destruction of the uterus.

Small growths which cause hemorrhage are submucous or interstitial and should be removed through the vagina. They can be made accessible by tents or by incision through either the anterior or posterior lip.

Multiple growths, or small growths, non-accessible by the vagina, which cause symptoms should be removed by abdominal incision. The uterus should be preserved whenever practicable.

When the growths are large or render extirpation of the uterus necessary, the entire removal of the organ is the simplest and most expeditious procedure.

DUDLEY.

OPHTHALMOLOGY.

The Use and Abuse of Spectacles.

Hasket Derby (*Boston Medical and Surgical Journal*, February 28, 1901) thinks spectacles are frequently prescribed when they are not absolutely necessary. In moderate degrees of hypermetropia it is a mistake to use glasses for anything but close work, for the patient, through constant use, becomes dependent upon them. In myopia glasses are probably too little worn, but great care must be exercised in treatment and no glass should be ordered until a thorough investigation of the history of the patient, the family tendencies, the acuteness of vision and the condition of the interior of the eye has been made. As to astigmatism, so much relief has been given by glasses that the tendency is to prescribe them when they are not really needed. The author believes they can be dispensed with in cases in which the vision, either with or without a spherical glass, is found equal. As to heterophoria, it is often cured by an improved general condition without the use of prisms.

Note on the Peculiar Nystagmus of Spasmus Nutans in Infants.

John Thomson (*British Medical Journal*, March 30, 1901) says in most cases of head-shaking, or spasmus nutans, in young children there is nystagmus. The close relation between this symptom and the

head movements has often been pointed out; but attention seems never to have been called to some essential particulars in which it differs from all other forms of nystagmus.

Ordinary horizontal nystagmus is, of course, conjugate in its character, the antero posterior axes of the two eyes remaining parallel to one another all the time. In this form, however, when the movements are bilateral and horizontal, the eyes incline alternately toward and away from one another; in other words, it is convergent nystagmus. In most of the cases—perhaps in as many as two-thirds—the shaking of the eyeballs is so small in extent and so rapid that the unaided eye can not determine the type. In those, however, in which the movements are wider and slower than usual their convergent character can be made out with ease and certainty.

The writer has for years been aware of this peculiarity, but has only recently had its unique nature and importance pointed out to him by Dr. W. G. Sym. The existence of a convergent form of nystagmus is not generally recognized, even in large and recent works of ophthalmology, nor is any reference to it to be found in books on the diseases of children.

The association of this peculiar type of nystagmus with head-shaking is not without interest in connection with the etiology of that condition. Although, as has been pointed out elsewhere [On the Etiology of Head-Shaking with Nystagmus (Spasmus Nutans) in Infants, Dr. A. Jacobi's *Festschrift*, May, 1900; and *Scot. Medical and Surgical Journal*, July, 1900], rickets, deficient daylight and general weak health are important factors in its causation, spasmus nutans in infants is, at bottom, a co-ordination neurosis. It develops during the months in which the infant is slowly learning to co-ordinate the movements of his eyes with those of his head, and it affects the muscles which have to do with these movements. Were the nystagmus which is present of the conjugate type it would not be in keeping with the other symptoms, because the conjugate movements of the eyes are of a different order altogether from those of the head-shaking. They are not movements acquired in infancy, but are in full play when the child is born; and they are not purposive in character. Those, however, concerned in the convergent type are distinctly purposive, and are gradually acquired and perfected by practice during infancy.

In those cases of spasmus nutans in which the nystagmus is rota-

tory, there is likewise a peculiarity in the extent and character of the movements. In the ordinary rotatory nystagmus seen under other circumstances, the movement consists of a simple totation of the globe round its antero-posterior axis, the central point of the cornea remaining practically unaltered in position. In the rotatory nystagmus of head-shaking, however, the eye movements are more of the nature of circumduction than pure rotation. In them the central point of the cornea passes through an ellipse or some other more or less irregular rounded figure.

In conclusion, it may be pointed out that there are some other ways in which the nystagmus of spasmus nutans differs from the ordinary form. For example, it is often unilateral, instead of being rarely so; and it is often verticle or rotatory, instead of being nearly always horizontal. The direction of the movements, also, is occasionally different in the two eyes—that is, vertical or rotary in one eye, and horizontal (at the same time) in the other, this state of matters being never seen in ordinary nystagmus. Lastly, it is invariably recovered from within a certain number of months.

Can Interstitial Keratitis be Prevented in the Offspring of Syphilitics ?

Peter A. Callan (*American Gynecological and Obstetrical Journal*, February, 1901) assumes that the majority of cases are due to hereditary syphilis, and the question may arise as to whether it can be avoided. The author's conclusions are: "The offspring of syphilitics show the evidences of the inherited taint in only a slight percentage of the cases; that is, if we except those children under 5 years of age. Only a slight percentage of such children develop interstitial keratitis. When the disease attacks one eye, all our treatment appears to be powerless to prevent its development in the fellow eye. We may possibly delay, but we can not prevent, the outbreak of interstitial keratitis in certain cases.

Notes on the Bacteriology of the Conjunctival Sac and Its Bearing on Surgical Procedure.

P. Chalmers Jackson (*Annals of Ophthalmology*, January, 1901) examined the secretion from fifty healthy conjunctivæ, thirteen of which were found to be sterile. In the remainder he found the following bacteria: *Staphylococcus pyogenes aureus*, *staphylococcus pyoge-*

nes albus, staphylococcus epidermidis albus, aerobacillus citreus, xerosis bacillus, bacillus coli communis and bacillus subtilis.

The author's conclusions are as follows :

1. That the pyogenic or pus-producing organisms are found in the normal conjunctival secretion, although probably in attenuated form.
2. That under normal conditions they do not propagate.
3. That the eye under normal conditions is bountifully supplied with means of antagonising bacterial growth.
4. That diminished resistance, such as occurs in inflammations of the membrane in operative interference, alters the nutritive nature of the secretion and probably converts it into a more suitable medium for germ life.
5. That the secretion of the eye is not an antiseptic in itself.
6. That strong antiseptics in the conjunctival sac diminish the resistance and place the eye on a lower plane to resist germ invasion.
7. That much attention should be given to washing out residual bacteria prior to operation.
8. That as much care should be taken in regard to antiseptics and cleanliness in the external preparation of both patient and operator as is adopted by the general surgeon of modern times, as, while the danger of suppuration is more remote, the result if it occurs is more disastrous.

SHOEMAKER.

PEDIATRICS.

Floating Kidneys in Children.

Abt (*Journ. Am. Med. Ass'n*, April 27, 1901) believes that floating kidneys occur more frequently than is supposed; he reports five cases; the literature is very meager on this subject. Comby reported eighteen cases in children; sixteen of these cases were girls. In young infants we must accept the congenital origin, and in older children we must suppose at least a congenital predisposition.

Trauma may be the cause; chronic bronchitis with emphysema was present in two cases.

The symptoms are often latent; pain may sometimes be present; it comes on in paroxysms, colic, chills, fever, vomiting and perspiration

may be present. The urinary secretions may be temporarily diminished; gastro intestinal symptoms may be associated with floating kidney. In the five cases reported, three were girls and two were boys.

Recovery from a Congenital Abnormality of the Heart.

Thomson (*Pediatrics*, March, 1901) relates the history of a case of cyanosis neonatorum due probably to a patent ductus arteriosus, which recovered. The blueness was noticed a few days after birth; it was worse when the baby cried; it was a puny, undersized infant and was fed on condensed milk. A loud systolic murmur was audible all over the chest, but heard best at the base of the heart. One year later no abnormality of the heart and no cyanosis was present.

Blood Infections in Nursing Infants.

Delestre (*Annales de Gynecologie*, January, 1901) finds that premature infants are especially sensitive to the action of the streptococcus and the bacterium coli, and less so to that of the staphylococcus. When the infant is several months old then these latter bacteria have a marked influence.

The intestinal and pulmonary mucous membranes in the newly-born are large and badly defended surfaces. The umbilical wound is also a source of infection.

Blood infections occur in 73.5 per cent of nursing infants. The author recommends bleeding in the septic diseases of the newly-born.

Uricemia in Infants.

Comby (*Arch. de Med. des Enf.*, January, 1901) believes that uricemia is arthritism in embryo. As a rule, the disease is not marked until the second period of childhood; in infants it is characterized by cephalalgia and cyclic vomiting; later the chief organs may be attacked.

As regards the nervous system, paroxysmal headache, insomnia, night terrors, neurasthenia and pseudomeningitis.

2. Digestive tract: Cyclic vomiting, colic, diarrhea and constipation, muco-membranous enteritis and intestinal "sable."

3. Urinary tract: Renal and vesical lithiasis, albuminuria, glycosuria, hematuria, dysuria, vesical spasm and incontinence of the urine.

4. Respiratory apparatus: Spasmodic coryzas, epistaxis, laryngitis and asthma like attacks.

5. Circulation: Tachycardia, cardiac arrhythmia and hypertrophy of the heart.
6. Skin: Sweating, prurigo and eczema.
7. Fever: This is of the intermittent quotidian type.

The Blood in Infancy and Childhood.

Stengel and White (*Arch. Ped.*, May, 1901) review the literature of blood examinations in infancy and childhood and give an extensive report of the blood changes occurring in various diseases under their treatment. The following is a brief summary of their findings:

Pneumonia: Leucocytes, 20,400 to 68,000; polymorphonuclears, 47.5 to 86.1 per cent; mononuclears, 6.2 to 13.9 per cent; lymphocytes, 7.6 to 37.4 per cent; eosinophiles, 0 to 1.4 per cent; myelocytes, 0 to 2.2 per cent.

Typhoid fever: Erythrocytes, 3,320,000 to 5,200,000; leucocytes, 6,880 to 27,636; polymorphonuclears, 17.3 to 78 per cent; mononuclears, 6.2 to 50.7 per cent; lymphocytes, 6 to 32 per cent; eosinophiles, 0 to 1.8 per cent; the leucocytosis was found in complicated cases; myelocytes were present in a few cases.

Pertussis: Erythrocytes, 4,187,500 to 5,700,000; leucocytes, 12,145 to 34,667; polymorphonuclears, 29.2 to 41.4 per cent; mononuclears, 17.4 to 27.8 per cent; lymphocytes, 24 to 52 per cent. A marked lymphocytosis is characteristic of pertussis.

Varicella: Leucocytes, 7,466 to 19,360; polymorphonuclears, 44.9 to 75 per cent; mononuclears, 16.6 to 20.5 per cent; lymphocytes, 12.8 to 33.8 per cent.

Tuberculous caries: A polymorphonuclear leucocytosis was present; leucocytes, 20,579; polymorphonuclears, 70.3 per cent.

Acute rheumatism: There was no leucocytosis and nothing characteristic.

Noma: Moderate leucocytosis, 9,000 to 12,000; poikilocytosis, polychromatophilia, pseudovacuation and megalocytes; lymphocytes, 5.8 to 14.5 per cent.

Bronchitis: Leucocytes, 12 to 14,600; polymorphonuclears, 61 to 82 per cent; lymphocytes, 3.6 to 22.9 per cent.

Pleural effusion: Leucocytes, 13,610; polymorphonuclears, 37.2 per cent; mononuclears, 34.5 per cent; lymphocytes, 27.1 per cent; eosinophiles, 1.2 per cent.

Enteritis: Leucocytes, 16,081 to 27,666; polymorphonuclears, 29 to 76 per cent; lymphocytes, 13.2 to 31.8 per cent.

Congenital Occlusion of the Duodenum.

Cordes (*Arch. Ped.*, June, 1901) reports a case of congenital occlusion of the duodenum and reviews the literature of the subject. He finds altogether 57 cases reported; the causes of this interesting condition are given:

(a) Errors of development; (b) volvulus; (c) fetal peritonitis; (d) ulceration; (e) pressure; (f) abnormally long persistence of the omphalomesenteric duct; (g) traction due to inguinal hernia; (h) circulatory anomalies—absence of arterial branches, and (i) embolism of the superior mesenteric artery.

The author tabulates the reported cases.

In cases of total occlusion the ages varied from 30 hours to 9 days; in cases of stenosis from 30 hours to 6 months.

Vomiting of material like meconium—yellowish or black material was noted in nearly all the cases; meconium stools were present in nearly half of the cases; in these cases the atresia must have occurred in the latter months of pregnancy.

The points of occlusion are near the opening of the common bile duct, either above or below.

Hemorrhage from Pyothorax.

Jacoby (*Archives of Pediatrics*, July, 1901) reports a case of hemorrhage from pyothorax. A piece of the sixth rib was removed, the pus allowed to flow out and the cavity washed out with Thiersch's solution; suddenly a gush of blood came; it was found that the bleeding arose from tufts covering the visceral pleura; it was checked by the tampon.

Infantile Atrophy.

Morse (*Annals of Gynecology and Pediatrics*, July, 1901) defines infantile atrophy as a morbid condition of infancy in which there is extreme wasting of the soft tissues of the body without demonstrable organic lesions. The causes are artificial feeding, unhygienic surroundings and inherent weakness of constitution. It sometimes follows intestinal diseases. The true cause must be some disturbance of the functions of absorption and assimilation. No characteristic pathologic lesions are known.

The diagnosis is from starvation, wasting secondary to diseases of the alimentary tract, congenital syphilis and tuberculosis.

The prognosis is always grave; no drug has a specific action; the best food is breast-milk; modified cow's milk with low percentage of fat, moderate percentage of sugar and proteids rank next in value.

Jaundice in Children.

Still (*Clinical Journal; Medicine*, May, 1901) considers jaundice chiefly with reference to prognosis. From 30 to 80 per cent of all infants have icterus neonatorum. It commonly appears within the first week. The child's health does not suffer and in one or two weeks the jaundice disappears. In these benign cases there is not the intense yellow of those who have congenital obliteration of the ducts, nor the enlargement of the liver and spleen, and hardness of the liver which characterizes these obliterative cases. Some cases of prolonged jaundice, while they apparently recover, may later show signs of grave constitutional disease. The origin of icterus neonatorum is due to obstruction from increased viscosity of the bile.

Biliary concretion and calculi are very rare in children, but are most common in the first few months of infancy. Of 23 cases which he collected, 15 were in infants. Deep jaundice at birth suggests congenital syphilis,

In children beyond the age of infancy, jaundice is most frequent between the ages of two and six years. The child usually complains for some days before the jaundice appears, and is often fretful, the appetite is bad, and some disturbance of the bowels is present. The urine becomes dark, and feces pale. Slowing of the pulse and itching of the skin is not common.

Jaundice is not infrequent in anemia, heart disease and tuberculosis. Cirrhosis of the liver is not uncommon in childhood.

The Alimentation of the Newly-Born.

Budin (*Lyon Médicale; N.Y. Medical Journal*, May 18, 1901) says that after birth the infant takes little milk; up to the tenth day the quantity augments and then remains stationary for a while. The necessary quantity of milk for twenty-four hours is calculated by multiplying by 2 the figure of the child's weight and suppressing 0 (zero). Thus: A child of 2,500 grammes will require $250 \times 2 = 500$ grammes; one of 3,700 grammes, $370 \times 2 = 740$ grammes, and so on,

Etiology and Serum-Therapy of Infantile Dysentery.

Valagussa (*Cent. f. Bakt. Paras. und Inf.; Archives of Pediatrics*) after the study of an epidemic of dysentery arrives at the following conclusions: There exists in infantile pathology a disease which may be found at any time. Tenesmus and frequent stools containing blood, mucus and pus are characteristic; the cause is a colon bacillus. The blood serum of these children has a specific agglutinating action on this bacterium.

The serum of animals containing the plasmoprotein substances of Celli's bacterium coli dysentericum has a curative effect. These observations corroborate the investigations of Escherich.

Antitoxin and Diphtheria.

Three papers on this general subject appear in the *Therapeutic Gazette*, of July 15, 1901.

THE ACTION OF ANTITOXIN.—The first is by McFarland on the action of antitoxin. He reviews the older theories and discusses the two most prominent. The first, which is supported by French investigators, is that the antitoxin stimulates a vital change in the body cells, particularly the leucocytes, by which they become unusually resistant to the influences of toxins, endure their presence without injury and, as far as the leucocytes are concerned, destroy them by the generation in their cytoplasm of neutralizing substances.

The second theory, which is championed by the Germans and English, is that the interaction of the toxin and antitoxin is a purely chemical one in which the animal is passive.

The objection offered by Calmette that heat will destroy the antitoxin and not the toxin when the two are mixed has been upset by Martin and Cherry, who found that no separation of the toxin and antitoxin occurs if a mixture of the two is allowed to stand for twenty minutes at 37°C. It must now be conceded that the chemical theory has no fatal objection, although certain vital phenomena also usually take place.

THE TREATMENT OF DIPHTHERIA OTHER THAN WITH ANTITOXIN.—Griffith writes on the treatment of diphtheria other than with antitoxin. The most important is prophylaxis. All precautions to convey the infection to others must be divided into (1) Hygienic and dietetic; (2) local; (3) general and constitutional.

Hygienic measures are similar to those employed in other infectious diseases.

Local treatment may accomplish much. In nasal diphtheria a cleansing antiseptic solution used with an atomizer or syringe is very beneficial, but it should not be used if the child struggles against it as to cause exhaustion.

In pharyngeal diphtheria the application of hydrogen peroxide followed by Loeffler's solution is best.

In laryngeal diphtheria medicated watery vapor with benzoin, eucalyptus, turpentine, carbolic acid and the like are beneficial.

Constitutional treatment, since the use of antitoxin, has declined, but stimulants must still be used; alcohol and strychnine are of most service.

THE PRESENT ASPECT OF THE ANTITOXIN TREATMENT.—Steele writes on the present aspect of the antitoxin treatment. While he admits that the mortality has been very much lowered by antitoxin, he asserts that the general city death rate from this disease is not as satisfactory as it should be. He believes that the profession, as a whole, do not as yet employ the antitoxin with the confidence and energy that are necessary.

Summer Diseases of Children.

Several articles under this general subject appeared in the *International Medical Magazine* for July, 1901, and are worthy of review.

TREATMENT OF THE FEBRILE STAGE OF GASTRO-INTESTINAL DISORDERS IN CHILDREN.—Halloway contributes an article on this subject. The gastro intestinal mucous membrane represents the largest gland in the human body. Digestive troubles comprise two-thirds of the disorders of early life. Heredity and environment explain all the causes.

The fever is due to a toxemia. Medicine must be with germicidal drugs. But antiseptics may injure tissues. Irrigate the bowels with alkaline solution. Give calomel in small doses followed by castor oil.

Bathing requires care. Do not handle them too much. Ice-bag to head and one under each arm frequently controls temperature. Bismuth and salol are recommended.

In regard to foods, the author recommends albumin water. Toast water or gum water act well.

THE TREATMENT OF CHOLERA INFANTUM.—Stewart writes of the treatment of cholera infantum. Elimination is first, diet is second, hygiene and change of air third, then antiseptics and astringents. As to the first, he recommends calomel. The patient should be starved from twelve to thirty-six hours, then barley, albumen, or toast water given. Bismuth, salol, and sulphocarbolate of zinc are recommended as antiseptics. Fever is combatted by sponging. Hypodermoclysis of normal salt solution should be used in severe cases of depression. Morphine and atropine may be given hypodermically if the discharges are very excessive.

Blackader recommends calomel as the initial purgative. Flush the whole colon. Starvation of the infant for twenty-four hours, then give dextrinized gruel. Administration of drugs plays a very secondary part.

THE PREVENTION OF SUMMER COMPLAINT.—Fischer writes on the prevention of summer complaint. The infant must be regularly fed, but common sense must be used. The nipples of the mother must be kept clean and healthy. In artificially fed infants the greatest attention must be given to the milk. The milk must be absolutely clean and fresh.

ZAHORSKY.

SURGERY.

The Appendicitis Operation.

Sprengel (*Centralblatt f. Chirurgie*, No. 28, 1901) lays especial stress on the importance of elevating the pelvis in operations for appendicitis. In other respects his method is not far different from that of other authors. When much pus is present he makes liberal use of gauze before liberating the same. Then, after it has escaped, he changes his tampons and makes a decided effort in every case to remove the appendix. He prefers the Mikulicz bag to any other form of drainage; and the results which are claimed in his article certainly justify the methods employed.

The Topography of the Vermiform Appendix.

Mueller (*Centrablatt f. Chirurgie*, No. 27, 1901) presents an article which contains only one point of interest, viz., that the vermiform appendix can be found invariably by following any one of the

three teniæ to the point where they unite with one another on the head of the cecum. In America this little point is so generally known and regarded as one of the primary lessons in abdominal surgery, it seems almost ludicrous that the great *Centralblatt f. Chirurgie* should give up two pages to an article which contains nothing of value but the information above quoted.

The Best Incision in Operations for Mammary Cancer.

Rodman (*Annals of Surgery*, July, 1901) considers that the best incision should allow for the removal of all diseased tissue and, at the same time, permit of primary closure in the most cases. He gives in his paper a very neat résumé of what is now known of the anatomy of the lymphatics of the breast. An interesting point mentioned is that breast carcinoma is decidedly more malignant the younger the patient. This he has been able to verify in three women under thirty years of age. The incision to which Rodman gives preference is that known as Warren's, one which is featured in the "International Text-Book of Surgery."

The Treatment of Abdominal Aortic Aneurysm by Wiring and Electrolysis.

Matas (*American Medicine*, Nos. 12-13, Vol. I), in an extensive and interesting paper, presents the features of two cases which terminated fatally; the first of these having been operated upon by him. In this one a preliminary exploratory laparotomy was made and the parietal peritoneum was sewed to that covering the sac. A month later ten feet of silver wire was introduced into the cavity of the tumor and a galvanic current passed through the same for four hours. Extensive coagulation was accomplished, but nineteen days later the patient succumbed to the bursting of an accessory sac. The second case, operated upon by Dr. Parham, lived forty-five days after twenty six feet of fine steel wire had been introduced into a tumor similarly situated, and at the autopsy it was found the wire had followed the course of the aorta and passed into the left ventricle itself. The author says that three out of fifteen operated cases have been actually cured by this procedure. However, one is scarcely tempted to test its efficacy, after a perusal of the long list of dangers in the operation which Matas quotes.

BARTLETT.

NOTES AND ITEMS.

Dr. Frank R. Eversole died at the residence of his brother-in-law, Dr. A. J. Prosser, in this city, August 4, 1901, from carcinoma of the stomach. Dr. Eversole was 46 years of age and had been a practicing physician in this city for twenty-five years. At one time he enjoyed a large general practice but had devoted his attention entirely to genito urinary surgery for the last few years.

Dr. Daniel W. Marston.—The death of Dr. Marston, of New York City, occurred June 9, 1901, at Niagara Falls, the result of an attack of pneumonia, while on his way to attend the meeting of the American Medical Association, at St. Paul, Minn. Dr. Marston was a young man of much promise. An article from his pen on the "Diagnosis and Treatment of Pott's Disease of the Spine," appeared in the April issue of this Journal.

A Christian Scientist Fined for Practicing Medicine Without a License.—A Christian science healer of this city, "Doctor" George W. Barrett, was recently fined \$25 and cost for practicing medicine without a license. An elderly woman whom he had been attending had died and the death certificate signed by him stated that her death had been due to gastritis. An investigation revealed the fact that he was not a registered physician, and he was arrested for practicing medicine without a license, to which he pleaded guilty. This was probably the first prosecution under the new medical practice law.

Bubonic Plague in New York Harbor.—The bubonic plague has made its appearance in New York harbor. The steamship *Hohenfels* from Calcutta arrived in the harbor July 22nd with one of its crew suffering from symptoms of the plague. Examination of specimens taken from an enlarged gland revealed the presence of the plague bacillus. The case was apparently a mild one, the patient having been

at work on the vessel when found. The *Hohenfels* was quarantined and thoroughly cleaned and disinfected.

A Chinese Puzzle for Kansas.—The Board of Medical Examiners for the State of Kansas has struck a poser. Dr. Ah Sam, a learned and cultured gentleman, formerly of the domains of Empress Ann, but now of Leavenworth, Kansas, has presented to the Board a piece of parchment, covered with Chinese hieroglyphics, as his medical diploma. He asks this to be registered as such and a certificate granted to him permitting him to continue practicing medicine. Being a little rusty in their knowledge of the latest kinks in the orthography, orthoepy, syntax and prosody of the Celestial language, the Board, up to the last ballot, had not been able to decide unanimously whether it is a diploma from a medical school in Canton (for so the deponent sayeth) or a Chinese patent medicine advertisement.

"Noiseless Milk."—According to an exchange an Indiana dairyman was taken sick and went to the Hoosier capital for treatment. While lying in bed convalescing from a close shave after an attack of water on the brain, his conscience troubled him often because of a large fortune amassed in successful competition with the water department in his native town. He was especially annoyed early each morning by the rattle of the milk cans, and as soon as he recovered he had all his milkmen to wear rubber-heeled and rubber-soled shoes, and had rubber tires put on all his wagons. He presented to each of his customers a rubber mat upon which to set the milk can, and had all his horses shod with rubber shoes. Then he began to exploit his noiseless milk, and as a result his business was quadrupled and his noiseless milk has gained great popularity. Thus is shown the value of lessening certain kinds of noise,—but this may be a fable.

Governor Dockery as an Emergency Physician.—One of the St. Louis evening papers contained the following item August 15, 1901: "At the inquest held over the body of Charles H. Douhertry, a section hand, who was struck by a Missouri Pacific train Sunday morning near Washington, Mo., witnesses told how Governor Dockery temporarily treated the injured man. Governor Dockery was on the train at the time of the accident and when he learned that a man was injured he hastened to his relief. He was given stimulants and

placed in a comfortable position. After examining him thoroughly, Governor Dockery pronounced the mans injuries serious and directed that he be taken to the Missouri Pacific Hospital, where he died. Governor Dockery before entering politics practiced medicine."

Our Chief Executive is a most excellent physician as he is also a most excellent Governor, and has not yet received the full measure of his honors. Were it possible by our influence he would be President McKinley's successor.

Cases of Tuberculosis to be Reported.—The Health Commissioner of the City of St. Louis, Dr. Starkloff, has recommended the passage of municipal legislation declaring pulmonary tuberculosis to be an infectious and communicable disease, dangerous to the public health and that it be classed among the contagious diseases. There were 1,353 deaths from tuberculosis during the year previous to April 1st, last, and of this number 1,016 were caused by pulmonary tuberculosis. According to the estimate of the Local Health Board there are at present 10,824 cases of tuberculosis in this city.

Small-Pox Statistics of St. Louis for the Past Year.—During the year 1900 there were 217 cases of small-pox in St. Louis, of which 6 only were fatal. The small death rate is attributed to the general employment of vaccination. During the year 17,481 vaccinations were made by the physicians of the Health Department, and in addition to this, 34,480 vaccine points were distributed, the most of which are thought to have been used. The Health Commissioner recommends that vaccination be made compulsory.

Births and Deaths in St. Louis. — During the year 1900, there were in St. Louis 9,847 deaths, not including stillbirths, which occurred to the number of 724, making a total of 10,571 for which burial certificates were issued. Of the deaths, 614 were caused by violence; 25 were the result of surgical operations; 130 were suicides; 99 were homicides; 359 from accidents and one from legal execution. There were reported during the year 10,763 births, being an increase of 391 over the previous year. These figures are not exact because, owing to negligence and for various reasons, many births are not reported, so that the actual number of births for the year 1900 is undoubtedly greater than that given.

CLINICAL NOTES.

The Phosphates of Iron, Soda, Lime and Potash, dissolved in an excess of Phosphoric Acid, is a valuable combination to prescribe in Nervous Exhaustion, General Debility, etc. Robinson's Phosphoric Elixir is an elegant solution of these chemicals. (See page 13).

Intestinal Antiseptic: Salo-Sedatus.—This anti-fever and anti-pain remedy has been before the public for over ten years, during which time it has demonstrated its claims in many an epidemic of zymotic diseases. If we should give a reason for its efficiency in these diseases, it would be—that it addresses itself as a searching intestinal antiseptic. Intestinal autotoxemia—self poisoning, is as much a fact as is the fecal matter that is made in the intestines, and must leave our bodies. That we are not always poisoned by that matter is owing to the vital resistance of the entire organisms in its organs. Let this resistance be weakened at any point from any of the many possible material or psychic causes to which the human body is constantly exposed in active life, and the ever ready source of poison is ready for its complex of baneful operations. Help up this zymotic condition with Salo-Sedatus, and you help the organism to regain its former vital power of resistance.—*The Alkaloidal Clinic.*

Automatic Safety-Valve Stopper.—A DEVICE PREVENTING THE BURSTING OF PEROXIDE OF HYDROGEN BOTTLES. — The great trouble with peroxide preparations is that if the containers are tightly corked the oxygen which separates and is set free slowly but constantly as time passes accumulates until the bottles can no longer stand the pressure and burst or the corks are driven out. Of the two alternatives the bursting of the bottles is the most objectionable feature on account of the danger attached to it.

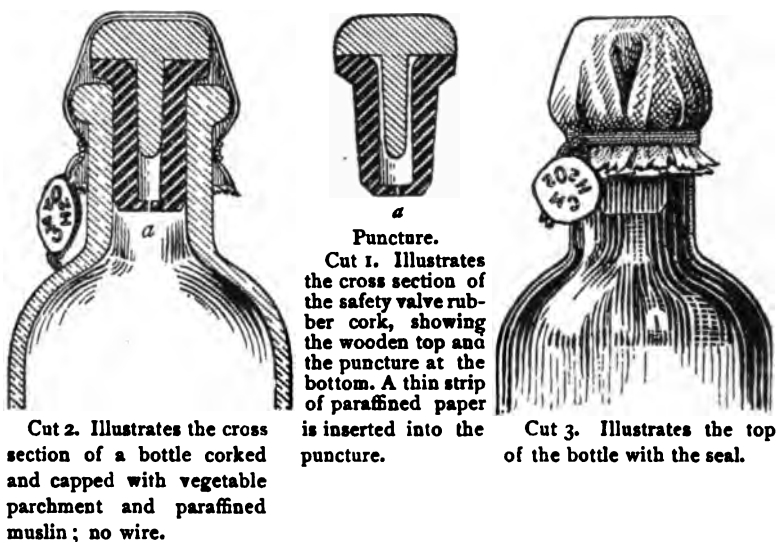
Containers of the hydrogen peroxide, U. S. P., which is a comparatively weak solution of H_2O_2 , yielding but 10 volumes of oxygen, may be closed with a wooded stopper, which by the porous nature of the material permits the escape of the gas almost as soon as it is set free thus avoiding explosion and rupture of the bottles or the driving out of the corks.

While these wooden stoppers answer very well for solutions of H_2O_2 responding to 10 volumes of oxygen or less, with stronger solutions, such for instance as Marchand's peroxide of hydrogen medicinal (15 volumes) or his hydrozone (30 volumes of oxygen) they are attacked by the solutions as are also the ordinary corks, and within four months are completely oxidized, not merely bleached but rendered

CLINICAL NOTES.

so soft that they cut like pot cheese; from that time the goods are unfit for sale.

In order to prevent these difficulties and especially to obviate the bursting of the bottles containing hydrozone, Mr. Marchand, the manufacturer of that article and other well-known brands of peroxide of hydrogen, has devised an ingenious stopper which he calls the "automatic safety-valve rubber cork," and which is shown in the accompanying illustration.



The material of the stopper is vulcanized rubber; the beveled end is punctured through in such a manner that when the pressure in the bottle rises above 5 to 8 pounds to the square inch (according to the thickness of the rubber at the bottom, which may vary slightly), the excess of free hydrogen finds free egress and thus relieves the tension.

This device is first inserted, and a plug of porous wood driven in, thus stiffening the rubber and completing the operation of "corking."

The capping consists of vegetable parchment covered with paraffined muslin, no wiring being used or needed.

It is easily seen that this style of closing the bottle obviates the possibility of bursting. Assuming even, that through some imperfection of the stopper, the puncture should close as soon as the pressure rises to a point far within that required for rupture of the bottle, the stopper, not being wired down, will yield and be forced out.

Retail druggists who have for so many years been the chief sufferers and losers from the bursting of the peroxide containers, and the deterioration of the substance otherwise from the causes indicated above, will welcome Mr. Marchand's invention as a happy solution of

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ORIGINAL CONTRIBUTIONS.

**Ureter Catheterism in the Male: A New
Ureter-Cystoscope.**

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THE following case, quoted from a recent issue of the *Zeitschrift für Klinische Medicinische*, Band 38, Heft 5, and the *Philadelphia Medical Journal*, June 23, 1900, illustrates not only the desirability of possessing some means of avoiding such an unfortunate result as depicted, but also the embarrassing position in which the surgeon finds himself in certain cases when deprived of such a means:

"A girl, 21 years of age, was subjected to laparotomy because of the absence of the vagina and the presence of a tumor in the pelvis, which was thought to be a hematometra, and an artificial vagina could not be made. The operation was undertaken in order to remove the ovaries and prevent further menstruation. The left ovary was readily found and removed. The tumor was incised and found to be a sac containing a hard body and a mass consisting chiefly of dark blood-clots. When the operator advanced to the removal of the tu-

Read before the Medical Society of City Hospital Alumni, May 2, 1901.

mor he found connecting with it a cord running downward, which made him suspect the possibility that the tumor was a kidney. It proved to be a kidney, with marked fetal lobulations and portions which were markedly hypertrophic and others equally atrophic. The patient passed no urine after the operation and became nauseated. She was given packs and sweat-baths, which gave some relief, but the weakness increased. She became apathetic; the left parotid swelled, and the swelling became so great as to finally interfere with breathing. She grew restless, the pulse became small, and strength was lost rapidly. Seven days after the operation she was somnolent, the pupils were contracted and unresponsive to light, and she died, with temperature subnormal. On post-mortem there was no sign of peritonitis. The uterus and vagina were absent, likewise the right kidney and its ureter, and the right ovary. The tumor that had been removed was the only kidney."

Under such conditions, of course, uremia and death were inevitable. This diagnosis was not made by an amateur, but by one of the masters of the surgical art in Germany, and such a happening is not by any means unique with him; the same thing has been done a number of times by others, and the records of operative work on the kidney, so brilliant in other directions for the last thirty years, have been greatly marred in this respect, through lack of completeness in diagnosis, either preliminary to, or during an operation. DeJong's statistics of 197 nephrectomies with 81 deaths, records 2 of them (2.5 per cent) as depending on the fact that the other kidney was absent; and there were 9 others in which the patients died because the other kidney was so diseased as to be unable to carry on the functions of a kidney. This makes 11 cases, or 13.5 per cent, in this series alone, in which death was contributed to by the operation.

That the profession of the world has appreciated this unfortunate defect in renal surgery and has tried its utmost to remedy it, is indicated by the persistent endeavor it has made in various directions to accomplish a more refined and complete diagnosis of kidney conditions before any such radical operation is undertaken. For this purpose, such heroic measures have been advocated as suprapubic cystotomy for ureteral catheterization (Harrison, Guyon), or exploratory laparotomy for the purpose of palpating both kidneys (Knowsley Thornton). It is evident that the latter procedure could not indicate more than the mere presence of two kidneys, not furnish-

ing any information as to health or disease of one or the other.

Of late years, more useful and less radical means have come into vogue, the endeavor being to secure the two urines separately by means of devices for catheterism or suppression of one ureter at a time. The ureter-catheterizing cystoscopes of Nitze, Brenner, Casper, and Albarran, and the urine segregator of Harris have been most favored by the profession.

The cystoscopes mentioned have all been based on the plans of the previous cystoscopes of Nitze and Leiter, with telescope lenses, hot electric lamps, and the addition of tubes for the conduction of small ureteral catheters. Theoretically, or when used in the phantom (artificial) bladder, filled with clear fluid that does not become opaque, these instruments seem to work beautifully. The artificial ureteral openings can be plainly seen and penetrated with the catheter, and everything works charmingly; but usually, when we come to make practical use of them on a patient, affected, for instance, with hematuria or some obscure urinary lesion, our troubles begin; we find that, both on account of the complicated nature of the instruments themselves, with their telescope-lenses, refractors and magnifiers, and hot electric lamps, all of which must be perfect and perfectly adjusted in order to give service; or, on account of the conditions under which it is necessary to use the instruments (clear fluid is required, not too cold nor too hot, and in sufficient quantity to afford working-space for the instrument), difficulties rapidly accumulate, and, in a large proportion of cases to a degree that makes the operation impossible, even in the hands of skillful and practiced surgeons. In a series of 26 attempted ureteral catheterizations in the male, reported by Dr. Tilden Brown (*Annals of Surgery*, December, 1899), there were 7 failures, or 25 per cent. There can be no gainsaying the fact that this is too large a percentage of failures for a surgical procedure to be satisfactorily reliable. And this series represents the efforts of those most accustomed to the work and presumably, most skillful in its execution. Attempts by unskilled hands will undoubtedly give a much larger percentage of failures.

If such be the case, the instruments for ureteral catheterism in the male hitherto in use fall far short of affording satisfaction, to say the least.

This is likewise true, in my opinion, of the Harris segre-

gator. It not only causes an unbearable amount of pain in a number of cases, even after the generous use of cocaine, but its results are erratic and unreliable. I have reached this conclusion not only from my own efforts with the instrument, but have had equally unfavorable experiences reported to me by several of my friends in the profession. It may drain from one side and not the other for a time, and later, stop draining from the first and begin to drain from the second; or bloody urine may come from both sides when it should come from only one. An enlarged prostate is apt to compromise the efficacy and reliability of this instrument at all times.

My inability to satisfactorily use the instruments for urine differentiation in the male has been the incentive for the construction of the ureter-cystoscope herewith presented.

It fundamental object is the catheterization of the ureters in the male, but it may be used also in the female, although this has been so well provided for by the Pawlik-Kelly method.

I may say that I have succeeded in easily catheterizing the male ureters with this cystoscope a number of times when I had been unable to successfully use the older forms (Albaran's, Casper's, Nitze's), and I believe that with practice and the full development of its possibilities it will give far better and more certain service than any of the others.

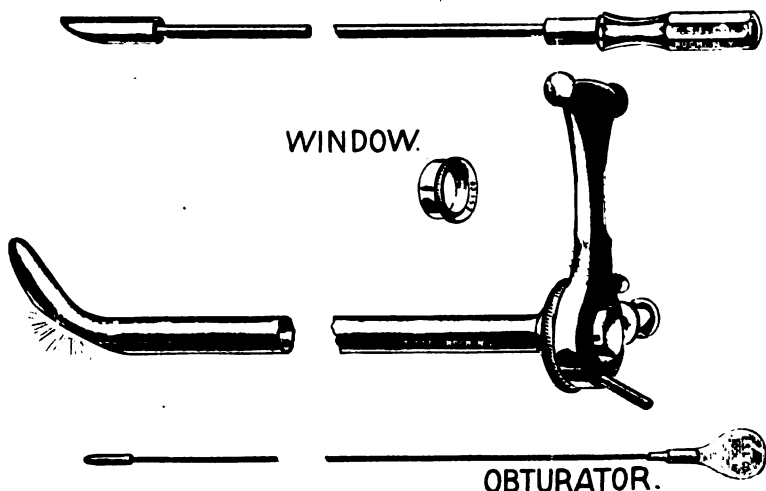
It consists of a tube, which carries in its upper wall a smaller tube for the conduction of the wires that connect with the electric lamp, and in its lower wall another small tube for the conduction of the silk-web ureteral catheter, and for guiding and controlling its inner extremity after it reaches the bladder cavity. The light from the lamp emerges through a glass window, sealed in the roof the main tube. The lamp, when burnt out, is removable by unscrewing the tip and pulling it out.

To facilitate the introduction of the cystoscope, an obturator is furnished, which closes the distal orifice and prevents scraping of the membrane against the edges of the opening; but, at the same time, these edges are so rounded that they may be brought in contact with the membrane without injury to the latter; so that the instrument, if withdrawn from the bladder into the prostatic urethra, may be pushed back into the bladder without re-inserting the obturator.

A glass-covered cap may be placed over the ocular end

to enable the operator to forcibly distend the bladder with air when that condition is not effected by posture. The inflation is made by a rubber bulb attached to a stop-cock.

The ureteral catheter which I employ is the same as that furnished with the Casper cystoscope. The lamp made use of is the small mignon lamp but lately introduced by the makers, and possesses the remarkable attributes of much light and little heat; though affording a brilliant glow, it radiates so little heat that it may be held within a quarter-inch of live tissue for an indefinite period and without discomfort, to say nothing of pain. It is really this property of the electric lamp that makes this instrument feasible. A hot lamp requires the shield and protection of fluid before it can be introduced into



the bladder; whereas this can be used with perfect safety and comfort, so far as heat is concerned, in the *empty* bladder. Thus the use of fluid is eliminated, together with its several disadvantages, such as rapid clouding by in-flowing pus or blood, etc.

From the brief description given, is evident that the instrument is extremely simple, which, I believe, is one of its chief advantages. Its freedom from complexity relieves it of many of the sources of difficulty encountered in the use of the older forms. It has no lenses to intervene between the eye and the object of investigation. Lenses must be perfect in order to be of any service whatever, and perfection in them is both expensive and difficult of attainment; and after per-

fection has been attained, the usefulness of the instrument may be destroyed in an instant by the displacement of the lenses in the slightest degree or the clouding of the cement that secures them. Sometime ago my Leiter cystoscope suffered in this way, and it required a trip to Europe and six months' time to replace it in my hands for use again.

The window in this instrument is so placed that should it become smeared with pus or blood it may be cleansed by a cotton swab without removal from the bladder. The lamp is brought within a half inch of the membrane undergoing search for the ureteral opening, and the closeness and directness of the illumination thus produced is of large advantage in facilitating its discovery. It is well known by those who have studied this subject that the finding of a ureteral opening under the most favorable conditions, for instance, with the bladder laid open before the eyes, is often a difficult matter, so that every point that favors its exhibition should be secured. It is doubtless true that no instrument will ever make the operation of ureteral catheterization so easy that it may be invariably accomplished by those unaccustomed to the work.

A difficulty to which attention is called by Dr. Tilden Brown (*Ibid.*), is that met with when the bladder is so contracted that only two ounces or less of fluid can be retained in it. This small amount does not afford enough working-space for the instruments mentioned, with the exception of the Brenner, and it can not work in less space than that given by the amount mentioned. In using the present instrument no fluid is used at all; on the contrary, the bladder is emptied as much as possible beforehand, and it is not desirable to have it distended to any marked degree, even with air. The absence of fluid prevents the clouding of the field of view by in-flowing or pus blood. Indeed, the emerging of bloody fluid from a ureteral opening would assist in the discovery of the latter by marking its location.

Sterilization.—It is well known that the cystoscopes in the market are not sterilizable by the ordinary means of dry or steam heat, because of the delicacy of their construction and the presence of the cemented lenses. Before using this cystoscope it may be placed in a steam sterilizer as long as is desired.

In a recent paper on a subject allied to this, Dr. Lilienthal (*Journal of Cutaneous and Genito-Urinary Diseases*, March,

1900), has this to say: "In by far the greater number of cases in which catheterization of the healthy ureter is practiced, disease of the other kidney or of the bladder is present, and the region about the ureteral orifice, not to mention the ureteral mucous membrane, is anything but sterile. Efforts at disinfection are, of necessity, incomplete; first, because it is not possible actually to disinfect mucous membranes; and, again, because there is constant soiling from the other ureter. The danger is, theoretically, and perhaps practically, minimized when the catheterization is done by the dry method of Kelly, in which the ureteral catheter need not touch any tissue except that at the mouth of the ureter itself."

The same advantage is afforded by this cystoscope, which employs the "dry method." The inner walls of both cystoscope and catheter-carrier are sterilized, as mentioned, so they do not contribute any organisms to the sterilized catheter; and the catheter emerges from the inner extremity of its carrier to pass directly into the ureteral opening, without touching either fluid or mucous membrane, save that of the ureter itself.

I have not attempted to make any especial provision for catheterizing both ureters at the same time, but there are two ways in which double catheterization may be accomplished: By making the catheterizations of the two ureters at successive sésances, or successively at the same sésance; or, after the ureter-catheter is introduced into one ureter, a small soft rubber catheter is introduced into the bladder through the main tube; both catheters are allowed to remain in their positions as the cystoscope is withdrawn; one of them drains directly from the ureter, the other from the bladder-cavity, which, of course, is collecting the urine from the other ureter. As to whether this maneuver is perfectly reliable, avoiding any chance for a mixing of the two urines through the escape of some of the urine along side of the ureteral catheter, there is a question. However that may be, some operators depend on it, notably, Guyon. If the catheter fits in the ureter tightly, it will probably not allow of any escape; but if it is a loose fit from patency of the opening, one should not rely on this method, but resort to successive catheterization.

Technique.—At first, in studying the use of this instrument, I made use of the knee-chest posture, in which position, when the cystoscope was introduced and the obturator with-

drawn, allowing the entrance of air into the bladder, the traction of the abdominal contents on the fundus of the bladder would result in wide distention of the organ, even without any forcible pumping of air into it. But although the mucous membrane could then be plainly seen, I was disappointed in many cases in the fact that the ureteral openings did not come within sight; they seemed to be located just "around the corner" of the projecting vesical neck. While this was not true in all cases, it was too frequent an occurrence to make the procedure reliable; so that I had to resort to the dorsal decubitus, and have found it to be very much better adapted to the easy discovery of the ureteral openings; and by providing a semi-Trendelenburg pose to further gravitation of the in-flowing urine toward the vesical fundus, and at the same time causing moderate forcible distention of the organ through the air-cock of the instrument, the interference of accumulating fluid is done away with. That is the gist of my present plan.

In the female, placed in the dorsal position with the hips well elevated, when the obturator is withdrawn from the cystoscope, permitting of the in-rush of air, the bladder almost invariably dilates in the manner described as occurring in the male placed in the knee-chest position; but with the male in the dorsal position this is not the case; passive dilatation does not take place, and forcible distention with the air-pump is necessary. I have noticed that whereas no damage is done to the bladder by injecting air into it, and no danger can come from its possible ascent into the ureters (see the report of my experimentation on the subject, "Air-Inflation of the Bladder in Connection with the Bottini Operation," the *Medical Record*), it is a disagreeable fact that air is not well borne by the sensitive patient; it seems to cause a more painful sensation than a similar amount of water. I have not yet evolved a technique for anesthetizing the bladder only, that has proved satisfactory, and have hitherto worked with chloroform anesthesia—although I believe that with thorough cocaineizing of the posterior urethra and vesical neck, and the injection of some sedative solution, such as antipyrine, into the bladder, this difficulty will be overcome.

Preliminary irrigation and emptying of the bladder and urethra having been carried out, sterilization of the cystoscope and accessories accomplished, the patient is put under anes-

thesia and brought into the lithotomy position with the hips elevated. The cystoscope is introduced in the manner of ordinary catheterization. On taking out the obturator there may be some spurting of urine that has been left in after the irrigation, or that has accumulated since then. I have had a pump constructed with which to remove this balance effectually. It is inserted directly through the cystoscope and then works automatically. Next, the ocular window is placed in position, air is pumped into the bladder to the degree of moderate distention, and the electric current is turned on. By moving the inner end of the instrument in various directions, a panoramic view of the interior of the bladder is obtained. If one is trying only for ureteral catheterization he immediately seeks one of the upper angles of the trigone. He sees a small, slanting slit or opening in the membrane, from which, if he watch closely, he will observe the emergence of a little spurt of urine at intervals. The silk-web ureteral catheter has already been in position for manipulation, lying within its proper tube of the cystoscope even before we introduced the latter into the bladder; so it is now readily shoved forward toward the ureteral opening which it easily penetrates and passes on up the channel, its flexibility enabling it to adapt itself to the natural curve of the ureter. While in this position, the penetration of the ureter by the catheter can be perfectly demonstrated to any spectator present. If it is desired to drain that ureter for a time, the catheter is pushed well up into the ureter and co-incidentally the cystoscope is withdrawn from the bladder and urethra. The ureter catheter is sufficiently long to permit of this. Air is prevented from escaping from the bladder through the ureter-catheter tube by the close hugging of both tube and catheter at their junction by a small tube. After the operation it is best to empty the bladder of the air by passing in a soft rubber catheter, or allowing it to escape through the cystoscope at the time of removing it. The patient is liable to experience grewsome thoughts if, later, he ejects air from his bladder.

While I at first did not expect very much from this instrument as a cystoscope, *per se*, its object being primarily the catheterization of the ureters, the view it affords of the interior of the bladder should not be underestimated. It is similar to the picture presented by the Kelly cystoscope in the female bladder; which, in certain respects, is far superior to that pre-

sented by the lens cystoscopes. Aside from the disadvantages of a fluid medium, already mentioned, these instruments with lenses give an inverted image; and, corresponding to the magnification of the field there is contraction of its area. In other words, there are these several modifications of the image before it gets to the eye of the observer. He may or may not be able to interpret and judge them correctly. But with the cystoscope under discussion, there is absolutely nothing to intervene the object and the eye, so that what is seen, is seen without any modification whatever. Moreover, to the sense of sight may be added that of touch, by means of the probe; so that when one is in doubt as to what he sees, he can add the testimony of the probe on the subject.

With the older forms of cystoscopes I have never been able to get a satisfactory view of the part of the bladder constituting the so-called neck—that part formed by the base of the prostate; with them I never have been able to clearly see the configuration of prostatic outgrowths or obstructing masses, occurring in hypertrophy of that organ. With the present instrument this maneuver can be accomplished in exactly the same manner that an endoscopic view is obtained, viz., by successive changes of its position, either in turning it or gradually withdrawing or re-introducing it. This, I believe, will prove a very valuable property in connection with this cystoscope.

The field of direct therapy to bladder, ureters and kidney-pelves will be materially broadened, I am confident, by making use of the direct access afforded by this instrument. Applications can be made to the vesical membrane by the cotton-tipped swab, as is done with the urethroscope; and successive antiseptic irrigations for ureters or kidney-pelves are no more impracticable than the catheterization itself.

[627 CENTURY BUILDING.]

Report of a Case of Obstructive Prostatic Hypertrophy; Complete Retention; Bot-tini Operation; Recovery of Ability to Urinate Vountarily.

By BRANSFORD LEWIS, M.D.,

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MEDICAL COLLEGE, ETC.

PATIENT, C. W. T., 51 years of age, American, farmer, was brought to me by my friend, Dr. John H. Britts, of Clinton, Mo., on April 5, 1901. For the past two or three winters the patient has been compelled to arise from two to four times at night to urinate; but during the summer he has not been troubled in this respect. There has never been any venereal infection, or any trouble with the genito-urinary organs until within the past year; last fall the patient began to notice interference with urination, greater frequency, with increasing indications of bladder irritation, which culminated in February, this year, in an attack of complete retention, Dr. Britts drawing off something like two quarts of urine on two or three occasions. In November, 1900, a severe attack of sciatica (right) laid the patient up, and he has suffered from this more or less ever since, to such a degree that he is now unable to walk.

At my first interview, April 5th, the patient appeared to be in a very bad condition generally, as well as locally; the yellow, cachectic hue was presumptive evidence of the implication of the kidneys, which was confirmed by finding albumin in the urine, lessened urea excretion (1.4 per cent), and lessened 24-hour quantity. Catheterism was difficult; a soft rubber cateter could be introduced at times without much trouble, but at others it required much painful and prolonged effort; and of the metal instruments, only one with a long prostatic curve could be made to enter. On this account I was unable to make use of the cystoscope for further diagnostic aid.

Because of the several unfavorable conditions present, I deemed it advisable to improve his condition as much as possible before attempting any operation, and even questioned the possibility of doing any operation on him at all, lest he might not survive it; but because of the complete inability to pass any urine without the aid of the

Read before the Medical Society of City Hospital Alumni, May 2, 1901.

catheter and at the same time the great difficulty and pain incident to the use of this instrument each time, it was evident that *something* had to be done even if it only gave temporary relief.

I therefore left a soft rubber catheter in the bladder, giving continuous drainage for a week, at the end of which time there was no improvement in his ability to pass water; there was still complete retention. Moreover, there was marked decrease in urinary secretion—practically almost suppression on April 10th, when only eight ounces were drained in 24 hours; and various evidences of uremia appearing, we gave him transfusion of normal salt solution which, with the addition of diuretin, stimulated the urinary flow to about forty ounces. Continuous drainage was kept up for another week, when the patient desired that operative measures be undertaken, saying that he would rather run the risk of dying than continue in his state of suffering as he then was.

The Bottini operation, with three incisions, and air inflation, was done on April 17th; local anesthesia; very little if any shock; moderate amount of pain (although the patient is extremely sensitive). On the same night, without trying to see if urine could be passed voluntarily, my assistant catheterized once; but since that time no catheter has been required; the patient has urinated voluntarily as he desired, beginning with the morning following the operation. He passes a good, full stream continuously until the bladder is quite empty, and gives the final spurts that indicate the ejection of the last teaspoonful or so. This is repeated as often as the bladder is refilled with antiseptic solution, used for irrigation. While there has been considerable of a burning sensation at the neck of the bladder, the result of the cauterizing, naturally, the general condition (excepting the sciatica) has improved exceedingly. The albumin has decreased to only a trace, the urea has gone up to normal, likewise the quantity of urine; the appetite is excellent and strength increasing. There was no hemorrhage, only a little coloring of the urine for the first three or four days. One chill, with a temperature of 104°F., occurring on the next day after the operation, but there was subsidence and prompt disappearance of this feature. Eleven days after the operation two sloughs came away, after which the stream was much freer.

I should have been glad to present the patient here, as I intended to do had his sciatica permitted his walking well enough to get around.

[627 CENTURY BUILDING.]

Do We Treat Syphilis Properly by Sparing the Patient in the Primary Stage?

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BALTIMORE, MD.,

CLINICAL PROFESSOR OF DISEASES OF CHILDREN IN THE BALTIMORE
MEDICAL COLLEGE.

THE origin of this paper was a remark made in casual conversation by a friend who is a distinguished alienist, the resident physician to a most progressive asylum for the insane. He said that in many cases general paresis (dementia paralytica) was a certain and unavoidable result of an attack of syphilis; and in explanation defined quite accurately those to whom the remark applied, as certain individuals whose heredity predisposed to insanity, but who, in ordinary life, with only the usual accidents to contend with, would in all probability escape their fate; but if the accident of syphilis occurred, such changes in the nervous system would take place, as its result, as would inevitably lead to paresis.

Now, considering the admitted increase of those in whom insanity is more or less developed, many of whom have married and begotten children after the condition of their nervous system must have become so deteriorated as to make hereditary insanity more than likely, and remembering the readiness with which the offspring of such parents give way to the many offences against public or private morals, it makes these words of an admitted authority worthy of the most serious thought by every physician.

These cases come to the asylum to be nursed and cared for until death closes the scene; the alienist can do nothing more than give comfort to a hopeless process; it is the general practitioner, the family physician, who must treat these cases in their inception, or guard against their occurrence as far as possible, and upon him must fall the burden of proving whether or not the hopeless prognosis, quoted above, is to be mitigated.

The question turns upon the disputed point of the curability of syphilis, if properly treated in its earliest stages; for the arguments against the likelihood of rehabilitating a nerv-

ous system, already somewhat damaged by the syphilitic virus, are too convincing to be assailed. I believe that syphilis may be cured, if seen early and persistently fought; that it is usually cured as it occurs, I am inclined to doubt. I have seen too many men, both in hospital and in private practice, who have developed unmistakable symptoms of late syphilis, chiefly of the nervous system, years after the primary invasion, who have insisted that they had been treated for the disease by competent physicians and discharged as cured. In every case patient questioning will develop the fact that the treatment had been far from thorough and had usually been neglected as soon as the external manifestations of the disease had disappeared.

To my mind the vital point seems the thoroughness of the treatment. I believe that the late manifestations of syphilis are far more numerous now than in former days when the mercurial treatment was pushed to a greater extreme. In toning down our method of treatment we have lost sight of the greatest good for our patient in endeavoring to spare him some of the lesser misfortunes of therapeutics. Is there any comparison between the temporary discomfort of a mild mercurial stomatitis and the horrible helplessness of paresis or tabes?

The older clinicians claimed to cure syphilis, and they actually did so, but they were not afraid to push their medicines to their full physiological effect. Like blood-letting, having been carried too far, the use of mercury has with us become emasculated and we strive to undo the harm, at a later stage of the disease, when the case has become practically hopeless, by using enormous doses of iodides. This heroic treatment comes too late; irreparable injury to the delicate nerve structures has been done, and the fatal result is only delayed, not avoided.

The experience of the older clinicians taught them that mercury was the true antidote to syphilis, and that the iodides were to be used if, by accident, the disease had not been entirely eradicated by the mercury. In many cases they were not required. After a free administration of mercury, until the late constitutional effects appeared, the syphilitic virus was erroneously thought to have been entirely destroyed; but then, as now, it was sometimes impossible to push the remedy fully in the primary stage, and the secondary and tertiary

stages were recognized, calling for the use of iodides rather than mercurials.

In our knowledge of the disease itself we have advanced but little beyond them, except in the study of the latest manifestations in the brain, nerves or arteries, with which they came less in contact; and in the treatment we have retrograded. Our heroic treatment of late syphilis after our insufficient and inefficient treatment of its early stages is far behind the older method of treating the disease in its inception with boldness and success.

The time to cure syphilis is during the first few months after it has been contracted, the longer it is allowed to remain in the system the greater becomes the difficulty of dislodging it; the more delicate structures are invaded, sclerotic processes are produced and the integrity of tissues is so destroyed that it is impossible to escape the inevitable result. In many instances, when the interference with the normal function of parts is produced by gummata or neoplastic changes, perhaps due to colonies of syphilitic micro-organisms, as yet unknown, good results follow the use of the iodides; but where the changes have been one of actual destruction of tissue, it seems useless to expect benefit from iodides or any other remedy. The danger that might have been avoided has led to such destruction of tissue as is beyond the possibility of repair.

The next great advance in the management of syphilis will follow the discovery of its specific germ. Until then we can only study the clinical aspects of the disease, and we seem to have reached the limit of good to be attained in this manner. With the isolation of the germ, and its cultivation, will come all the possibilities of serum therapy and protective vaccination. These discoveries may be announced at any time, but may not be known for years. Meanwhile it is necessary to meet exigencies always before us, recognizing the extreme severity of syphilis in every stage of its existence. The virus does not seem in any way attenuated, its virulence is just as great now as at any time in the past; one does not so frequently meet with the loathesome conditions so frequently described in the older writers, for the reason that medical knowledge is more diffused, and the cases are more frequently recognized and more promptly treated; just as large ovarian tumors are now far more rare than formerly, being sooner recognized and removed. But while the severe primary or sec-

ondary forms are comparatively rare on this account, the later lesions, especially of the nervous system, are far more frequent, occurring in individuals who, having acquired syphilis years before, have had treatment sufficient to check the earliest manifestations, but not to eradicate the disease.

The knowledge that we have gained is in being able to identify the symptoms as the result of syphilis, thought to be cured, but only held in abeyance, until, reappearing as paresis or other signs of nerve destruction. Recognizing this sequence of events, the lesson most necessary to learn is that syphilis must be totally destroyed as soon as its diagnosis is established. Unfortunately, we have no way at present of establishing the certainty of a cure; that will be possible after the syphilis germ has been discovered and studied, so that we must fight somewhat in the dark, with the one idea of a complete destruction of the virus, whatever it may be.

Experience has taught us that mercury is, above all other drugs, the specific antidote for syphilis, so mercury must be used, as freely as can be, according to the idiosyncrasy of the patient. Let it be pushed to the physiological limit, let a slight ptyalism supervene and after a short rest let the system of the individual be kept just within the bounds of full dosage for several weeks, gradually lessening the dosage, week by week, for three months, with occasional returns to the remedy in good-sized doses, during the rest of the year. A little more mercury may be thus used than is absolutely necessary, and some inconvenience may be caused to the patient, but the disease will be conquered much more frequently than by the method of meeting symptoms only as they manifest themselves, accepting treatment as satisfactory if it prevents external signs, while internal degenerations are going on unchanged.

After the first year mercury and the iodides should be used conjointly, being given freely during one month in each three, with an intermission of two months, during which, iron, arsenic or some other tonic may be administered according to the manifest requirements of the case.

During the third year, the same process should be repeated one month in six, after which a reasonable hope of total cure may be entertained.

As nothing is less certain in medicine than the final cure of syphilis, or the exact time at which that cure may be ac-

cepted, it would be wise to keep such patient under observation as long as one can, watching for some manifestation of the activity of the disease.

This outline of treatment may seem severe, but its thoroughness and severity will amply repay for the trouble that it engenders, if by it our patient gets rid of his syphilis completely, and has not hanging over him the living death of the insane asylum.

[10 EAST READ STREET.]

Surgery of the Mammary Gland.

By W. M. WRIGHT, M.D.,

INDIANAPOLIS, IND.

THE title of this paper as given on the program may be misleading to a limited degree. It is the purpose of the writer to review the development of surgery of the mammary gland and to briefly note some of the anatomical features of this organ, rather than to advocate any personal ideas on the important subject of surgery of the breast, or to detail observations from his own limited experience. The advance in surgery of the mammæ is the subject to be considered at this time. Progress in this field of surgery practically belongs to the present decade.

The manner and direction in which the lymph of the mammary gland is conveyed should be considered briefly in breast surgery.

The lymphatics of the breast are of special interest and importance both from an anatomical and a surgical point of view. The female breast is much more richly supplied with lymphatics than any other gland in the body. The male breast is scantily supplied indeed. There are three lymphatic streams leading from the breast: one outward toward the axilla, one inward toward the sternum and one backward toward the muscle. The deep lymphatics of the female gland communicate rather freely with those from the deep pectoral fascia, then, uniting to form a trunk, proceed to the axilla. It is a

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fact worthy of note, and one apparently peculiar, that the lymphatics of the deep pectoral fascia do not communicate to any great extent with the muscle. The current of the lymphatics is said to be away from the muscle and toward the fascia, not the reverse. Most of the lymphatic vessels of the breast are received by the lymph nodes of the axilla. These nodes are arranged in clusters. Gerrish has named them as four groups—the axillary proper, situated around the great vessels of the axilla; the pectoral, along the way of the long thoracic artery; the subscapular, located along the subscapular artery; and then the subclavian, which is situated directly on the costo-coracoid membrane, lying in a plane between the deltoid and the pectoral muscles. The nodes communicate freely with others in the same group or cluster; one group also communicates with another. Thus it is recognized that there is a most liberal communication between all the different sets of lymphatic glands of the armpit. The intercommunication between the various nodes and groups of nodes is an anatomical fact of interest and value to the surgeon and pathologist in dealing with infectious and malignant conditions of the axilla. This anatomical arrangement explains the ease with which infection of any one node or group of nodes may involve all the others. It is also claimed that there is a slight connection between the lymphatics of the breast and those of the mediastinum.

The pectoral nodes, or the lymphatic glands, located along the course of the long thoracic artery are, no doubt, the ones most concerned in the pathology and surgery of the malignant breast for they receive the lymph from the major portion of the mammary gland. Infection of the lymphatic glands of the axilla from cancer of the mammary gland occurs primarily in this pectoral group of nodes. Their infection extends very easily to the other glands or groups of glands involving these all more or less. Cancer of the female mammæ is a common malady. Perhaps with the uterus only excepted, the female breast is more frequently the seat of cancer than any other organ of the human body.

This paper will deal with surgery of the breast for the relief of malignant conditions only and surgery is conceded to be the only relief for these conditions. Velpeau said "that cancer left to Nature never disappeared." This statement is accepted generally as a fact which can not be disputed. Surgery for benign diseases of this organ merits no special signif-

icance from that of other organs of the body. Conservative surgery most distinctly has its place in diseased tissues of some parts of the human body. Conservatism in surgery for malignancy of the mammary gland is obsolete to-day. Only the radical will suffice in surgery of the gland for grave conditions. Surgery of the breast is essentially radical and heroic in its scope from the extensive lymphatic areas connected with the organ.

The progress in surgery of the mammæ has been remarkable. It has made rapid strides with most satisfactory results and surpasses the advancement of surgery in many other lines. Until the dawn of the last decade it was considered necessary in operations upon the malignant breast to remove the tumor only, being negligent to the degree of dissecting the skin back from the growth—a method of carefully preserving one of the most fertile seats for continuing the disease through the lymph channels, for certain lymph nodes in the axilla receive the lymph from the skin itself as well as from the glandular structures of the breast. The overlying skin should not only be carefully dissected away from the growth, so as to be entirely removed, but the breast and the axillary tissues should be as nearly as possible removed in one piece in order to avoid division of the lymph vessels and prevent the danger of infecting the wound with their cancerous contents. This step should always be carefully observed by the operator in cases where it is possible to do so. In some instances, however, it is absolutely impossible to observe this precaution.

The next step in the advancement which at that time now seems to have been somewhat sluggish was to enter the axillary space, or armpit, and remove infected glands only. This procedure was considered a bold move at that time. What timid and crude surgery this would be considered to-day with the danger of regional surgery reduced to a minimum through advanced knowledge of anatomy and perfect aseptic technique? Then only enlarged glands were sought and removed, the other axillary tissues being left undisturbed. Later the absolute necessity of removing all the axillary tissues when any of the glands in that space were involved became a recognized fact in surgery, no matter if the number were small and the extent to which they were involved was slight. All these methods were considered rather radical at the time. Volkmann was perhaps the first to thoroughly understand the

true current of infection in malignant disorders of the breast, declaring that the current of lymph was toward the deep pectoral fascia and not away from it. He advocated the removal of this fascia and the underlying tissue in cases of doubt as to the infection of the muscle. These were substantial gains that were being made in the evolution of this special line of surgery, but greater achievements were waiting in the near future. Years and years went by with the profession satisfied with an operation whose scope included the removal of the breast, the deep pectoral fascia and only the enlarged glands of the armpit, the other axillary tissues not positively showing infection to the naked eye being left *in situ*. To-day an entirely more radical view of the subject obtains in progressive surgery. The present view is not too bold nor daring for the conditions confronting the surgeon indicate radical means for relief. Bearing in mind that many cases are inoperable, no operation upon the malignant breast can be too extensive in its scope as long as there is material with the slightest suspicion of infection that can be removed—tumor, overlying skin, deep pectoral fascia, muscular fiber, both fatty and connective tissue—all axillary contents are to be carefully and completely removed. It is needless to say that the axilla should always be opened and thoroughly inspected for the infection of some structures is detected by the eye where possibly the hand has failed. All structures contiguous to the tumor should be extirpated, even if to the eye and touch of the surgeon there is the slightest doubt as to their positive infection.

Operations upon cancer of the breast should be early and complete. To Halsted and Meyer in this country belong largely the credit of complete and radical surgery of the breast. The logical theory of lymphatic invasion by microscopical infective elements teaches that every microscopical partical of lymphoid tissue should be removed. Prognosis is a grave feature in surgery of the breast, hardly less important to the patient than the diagnosis or the surgical measures to be employed. Extreme anxiety is felt over the outcome of the case. Pertinent questions are plied to the operator. How long will the patient live without the operation?

A positive opinion can never be given as to the probable length of time. A patient suffering with a malignant tumor of the breast might refuse an operation until the cancer would terminate fatally, for cancer yields to the knife only and not

to Nature nor therapeutic measures. Patients should be warned that indecision and delay might destroy their only hope for relief.

Another question will test the tact of the surgeon. It is this: How long will the operation prolong the life of the patient? The word "cure" here has an indefinite meaning. What is a "cure" of cancer in regard to the time of its probable recurrence following a radical operation for its removal? Is it one, two, three, ten or an indefinite number of years? By the term "cure" is generally meant the freedom from recurrence for a period of three years. Of course this time limit is purely arbitrary; the consensus of worthy opinion has named this limit. Most assuredly the surgeon is never able to positively state that the operation prevents a return of the cancer at any given time for there is some doubt of the belief that cancer can be definitely eradicated as any benign tumor can be. Hence, an extremely guarded prognosis should be given on this part of the subject.

The risk of an operation will greatly concern the patient. What are the dangers of an operation? will be asked. The mortality of the operations for the malignant disorders of the breast has decreased at an amazing rate. Early death from the operations is usually due either to shock or hemorrhage, while sepsis in some form is generally a later cause. It was formerly believed that the greatest danger of the removal of the breast was sepsis. At one time this was, perhaps, the greatest danger, but not so to-day. With the almost perfect methods of aseptic and antiseptic procedure which obtain in operative surgery at the present time, septic disorders are little to be dreaded.

It may be that the rational operation for extirpation of the malignant breast has not yet been attained. Halsted's operation is, perhaps, nearest the ideal one and may become the perfect one when modified by all that surgical skill can devise. The details of the Halsted method are simple enough, if they are quite extensive. There are a few brief points concerning the radical operation that could be mentioned with some degree of interest. The function of the arm may be slightly impaired but usually not to a serious degree. Fibrous ankylosis of the shoulder joint has been reported. The operation entails a risk to the very feeble and also to chronic bronchitic subjects. This operation is particularly indicated in cases

where the skin and pectoral muscles are extensively involved. Objection is urged against the extensive scar resulting from the radical operation, but this inconvenience, if not painful, can be borne by the patient for the sake of relief.

Considering the gravity of the radical operation with all its attendant complications in the way of delicate and important structures involved and extensive areas invaded and the possibility of a recurrence of the disorder within a few years—taking all these phases of the case into consideration—should the patient be advised to submit to the operation? This question has been discussed quite extensively with a well marked difference of opinion. The possibility of recurrence being excluded, there is perhaps no reason for argument on this question; without the ever-dreaded danger of recurrence, which is remote with the radical operation, the answer should be in the affirmative.

Even in the event of a probable recurrence, there is just cause for advising the operation after a full and clear statement of the case to the patient. Is it not a consolation to patients to know that an operation would afford them relief from local misery and suffering for at least two or three years and possibly prolong their lives to ten, fifteen or twenty years? And they should be comforted with the idea that in the event of a recurrence of the disorder it might be kept in abeyance by further surgical measures.

With the present advanced position of both pathology and surgical technique the gravity of this disorder is greatly reduced. The fact can not be disputed that extensive and careful surgery is eradicating cancer of the breast. Absolute and permanent cures are reported by perfectly trustworthy authorities, operable cases only being considered.

The mortality rate of radical operations is now placed at about 2 per cent. Operators have reported unbroken records of one hundred consecutive operations without a death. This record is unusual, and was, no doubt, obtained from selected cases. The results in surgery of the breast are continually improving and now it is stated that almost 50 per cent of cases have passed the generally-accepted three-year limit. Such great results can not perhaps be secured from a general line of cases, but the per cent of complete recoveries, which means permanent cures, is steadily increasing.

Let a few statistics attest the truth of this statement: In

fifty of his radical operations Halsted did not lose one case from the immediate effects of the operation. The same authority claims that local recurrence followed in only 6 per cent of cases. Many other reliable surgeons furnish equally encouraging reports on recoveries from their operations. The present status leads to the belief that greater successes will be achieved along further lines of progress.

[WILLOUGHBY BUILDING.]

Dangers from Quackery.

BY ISADORE DYER, PH B. (YALE), M.D.,

NEW ORLEANS, LA.,

PROFESSOR OF DISEASES OF THE SKIN, AND SECRETARY OF THE NEW ORLEANS POLYCLINIC; EDITOR "NEW ORLEANS MEDICAL AND SURGICAL JOURNAL," ETC.

ONE morning in the spring of 1900, just off the great boulevard of the National capital, and near an historic monument, a blatant fakir hawked his wares to an ever-changing crowd.

Boasting of his own distinction, with perverted discourse on so-called physiologic laws, he presented illustrations of the possibilities of disease, and concluded each stage of his peroration with a sale of something wrapped in the proverbial yellow paper. Not more distant than a stone's throw, a sombre garb of femininity raised in strident tones a voice of unqualified censure of medicine and its protagonists, every now and then urging her hearers to begin the practice of the Christian science creed. All this was in full view of the seat of the Nation's government, the cosmopolis of these United States. Just around the corner, the solid structure of the Patent Office invited the solicitation of the sanction of the government for such acts of offense against its intelligence. A special department is devoted to the records of patents on medicines and no provision is made to prevent the utmost secrecy in the formulæ.

Is it any wonder, then, that with this cornerstone in its foundation, the breed of hybrid and mongrel types of human wolves should grow into a band of sufficient size and strength

to fleece the public at will? The permission and authority which government license extends at once puts so high a premium upon dishonesty that the field of competition for the prize grows more and more full of ambitious methods.

The early history of quackery was marked by the ease with which an ignorant public could be gulled. All that was necessary consisted in a fair presence, a loose tongue and any kind of compound upon which the proper tissue of fulsome, flagrant claims of merit could be based. New communities furnished the fresher profits.

The lack of educational restrictions in qualifying men for the practice of medicine in so vast a territory as the United States and the absences of legal provision for the protection of the public itself largely accounted for the horde of quacks infesting all sections of the country, urban and provincial.

All people grow into some sort of education, however, and the effect of higher standards among the more honest students of all times has brought a natural reflex upon their surroundings. The peripatetic, longhaired, high hat, long coat and lantern-jawed charlatan has passed out of the more civilized communities and has left the way for the more advanced apostle of Beelzebub.

Some one has divided quacks into three classes: Those who don't know anything, who know they do not and fool the public anyway; those who don't know anything, yet who think they do, and those who do know something and speculate upon the public accordingly. We have discussed the first of these and have touched, in passing, upon the second.

The third class is the broad one in which modern charlatanism finds its place and followers. Every phase of dishonesty, grafted, or parasite upon the noblest of professions, is grouped under the type of those individuals, who presume upon the vanity of the human race to draw out of such a speculation the highest dividend to be derived from an investment of a disordered conscience.

Medical men sit quietly by and let the evil work go on, criminally guilty of a neglect of the effort necessary to the relief of the most potent disease of their body politic; they watch the birds of prey sweep down and carry off all but the chaff and, perhaps, bewail the fact in measured complaint; or else are satisfied to get their small return, permitting their calling to be prostituted by those who will.

The medical profession is not alone to be considered. There are generations to come and of these something should be said. It is bad enough that every community should have its quota of the individual quack, but this is far less potent as a factor for evil than the periodical and newspaper saturation with the advertisements of all sorts of purported remedial contrivances, expedients and means.

It is a confessed fact that newspapers and magazines depend upon their advertisements for their very existence; the more revenue the advertisements bring, the more desirable it is, as a rule. Any newspaper of the large cities may serve to demonstrate the truth of these assertions and those which follow.

Page after page is marked with the notice of some diseased condition adequately cured by any one of the advertised concoctions. Columns of purported reading text are concluded with a reference, adroitly interwoven, to some patent remedy.

Pages are covered with lithographed and highly colored illustrations of bottles, boxes, and victims to bear witness to the pretended merit of the contents.

Men of supposed repute, associated with the intelligence of professional calling or conferred distinction stultify themselves, and insult their contingents by submitting their photographs for such publication in the press.

It is easy to understand how certain actors, actresses and speculative politicians would for the very notice and notoriety seek publicity in any kind of print; but it is appalling to think that the names of ministers of the gospel, United States Representatives and Senators, legal luminaries of the court and of the bench, and military men of accredited attainment should allow their names to be strung out in full view of a public, only too ready to follow the lead of any suggestion pointing to a speculative result.

Nor is this all. The newspaper in the home has at all times been the synonym of civilization. Its position as an educator has entitled it to a freedom which is a part of the Constitution of the United States. It dispenses news and information of all kinds to all sorts of people; but for these reasons it should not put, with editorial sanction, the stamp of approval on all the poisons for mind and body contained in its medical advertising.

The child can no longer study the pictures of a newspaper without the possibility of its demand for the explanation of some illustration, perhaps only indecent in character.

The youth and maiden ignorant at first, grow to understand what imputed and veiled suggestions are intended to convey; and as they grow older, every day there is a stimulus to a morbid thought.

The Sunday newspaper is even worse than that of every day. The advertisements are more in number and in size. Fully one-third of some of these is devoted to so-called medical advertising and it is possible to find a catalogue of all the ills that flesh is heir to and for each a sure relief.

Encouraged by the newspapers and magazines, manufacturers of patent remedies are bold in using other means to spread their wares and only time may tell what limit the evil may reach.

In the competition, ever active, among these successful traders on human frailty, newer methods are every day devised. The daily mail of every household brings notices or samples of stuff; at times the concern will even send the agent with the sample, urging its merits upon the more ignorant members of the household first.

The sight of every honest man is met with a nauseating suggestion of neglected habit in the daily street car journey; the bulk of the car advertisements being made up of pills and remedies of like kind, a daily reminder of an affront to the community's intelligence.

Hotels, bill boards, public places, the line of active railroad travel, the illumination of city streets at night are full of notices of something for the man, who should be indeed ill after the successive reminders of his possible needs.

The public eye pays for it all; no advertising is possible without commensurate means and the means must indicate the profit.

Only when the modern civilization is at the acme of its intelligence can we hope for a relief from these impositions upon a higher sense of reason and of right.

"The mills of the gods grind slowly, yet they grind exceedingly small" and the future stands ready to prove its own obligation to Nature's laws.

Governments are all powerful in regulating the people,

even though they may not altogether control. The evidence of this is on the way.

One legislature after another has promulgated laws regulating the practice of medicine. One state after another has adopted certain regulations regarding its sanitation. In some states the law has gone farther and has established certain regulations governing food products; in Ohio this last provision has been made to cover medical products.

Texas has recently enacted a law governing the practice of medicine, in which the sale or dispensing of remedies is prohibited where these are "not compounded in the State of Texas."

These things are the lightning-flashes of a coming storm which is bound to clear the atmosphere of noxious ideas, based on decades of false education. Gradually the paternal force of government, State and National, interest in the community good will be evoked and then the abuses of the present will melt into nothing—into the oblivion of ignorance, which is already a word of difficult application in this, the Twentieth century.

On Making and Closing Abdominal Incisions.

By J. SHELTON HORSLEY, M.D.,

EL PASO, TEXAS.

IT has been said that nothing besides actual death of a patient can injure a surgeon's reputation as much as a hernia resulting from an abdominal operation. A fistula, especially a fecal fistula, is almost as disastrous to the operator's fame. These two unfortunate sequelæ are due either to the mode of making or the method of closing the laparotomy incision. No case of ventral hernia can be cured without operation, though fecal fistulæ frequently close after being kept clean; so in regard to recovery, the order of importance in which these affections have been mentioned is probably correct.

Read before the New Mexico Medical Society, May 9, 1901.

It is not the purpose of this paper to make an historical review of all the abdominal incisions, but merely to attempt to point out those, which from experience and observation, appear to me to be practical and followed by good results. Abscesses from the appendix, liver or intestines, and which are adherent to the abdominal wall, are usually opened at the point of adhesion without regard to typical incisions; yet, even in these instances, it is well to follow general rules and respect the course of the nerves as much as possible.

As for the general technique of making an abdominal incision, its location should be definitely ascertained and the skin and superficial fascia cut through with one stroke of the knife. Muscular tissue should be split wherever possible with the handle of the knife, then the transversalis fascia raised with thumb forceps and cut with scissors and the peritoneum similarly raised and cut. To my mind, there is nothing to justify an operator who attempts to cut down to the peritoneum with one stroke of the knife. No matter how much experience he may have had, it is impossible for any one to tell exactly how thick an abdominal wall is before it is opened. Making the incision as above described requires not more than one or two minutes, and the time gained by any other technique can not be very great, while the risk entailed is considerable. True progress has created a demand not for brilliant nor for timid surgery, but for thorough and careful work done with all haste consistent with these latter two requisites.

Of the numerous laparotomy incisions, seven will cover practically all the operations to be done in the abdominal cavity. For gastrotomy, the incision most used is internal and parallel to the costal cartilages of the seventh, eighth and ninth ribs. The other incision for stomach work is in the median line between the ensiform cartilage and the navel. For pylorotomy, gastrotomy or gastrectomy, this incision is used varying in length according to the operation to be performed. For operations on the gall-bladder, gall-ducts or the under surface of the liver, the incision of Bevan is most satisfactory. It consists, first, of a vertical cut about two inches in length through the outside of the right rectus muscle. This is used merely as an exploratory incision and after the conditions are determined, it is lengthened one or two inches more and a curved cut inward added to the upper end, and another outward to the lower end of the vertical cut. When this is completed,

two triangular flaps result, which give ample space. The incision resembles in shape the old italic letter *s*. For the vast majority of kidney operations, the incision from the twelfth rib downward and forward to the crest of the ilium is satisfactory. If more room be needed it may be obtained by a transverse cut inward from either end of the incision, usually from the lower end. For appendicitis, the McBurney, or muscle-splitting, incision is without an equal. It is made about two inches internal to the right anterior superior spine of the ilium with its center on a line from this process to the navel. It follows the direction of the fibers of the external oblique muscle. The fibers of the aponeurosis of this muscle are split, not cut and after retraction the internal oblique and transversalis are split in the direction of the fibers. When this incision is made and closed properly, the abdominal wall is just as strong as it was before operation, and hernia is impossible. In the middle line below the navel, incision is made for numerous operations. It is better to make it a little to one side of the mid line in the substance of one of the recti muscles. The only other incision of much importance is the one for colotomy or colostomy. This is usually made in the direction of the external oblique fibers. It is situated about two inches above Poupart's ligament, is two inches in length with its center above the junction of the middle and outer thirds of this ligament.

As to closing abdominal incisions the same rule that is applicable in all branches of surgery holds here, *i. e.*, of two methods possessing about equal merits, the simpler is the better. In the middle line where the only muscle is the rectus, whose fibers are split, not cut, a single row of silkworm-gut sutures is all that is necessary to maintain perfect approximation. Greig Smith clearly brought out the fact that between superimposed layers of sutures running in the same direction there must necessarily exist dead spaces, which are eliminated when a single row of sutures is used. However, when we get out of the area of the rectus muscles, different conditions obtain and we always find two or more layers of muscle fibers running in different directions. In muscle-splitting or in ordinary cutting incisions, these layers should be sutured separately with catgut. Antiseptic silk, if not too large, may be used, though catgut and tendon is always preferable. The skin is closed by a subcuticular continuous suture, care being taken not to include too much fat.

Methods involving burying silk, silver wire or silkworm-gut, are rapidly passing away in favor of the use of absorbable suture material. Of these three mentioned, the most objectionable for burying is silkworm-gut. In many instances it forms a sinus which, sooner or later, demands removal of the suture. The old excuse of the impossibility of sterilizing catgut does not hold now, as there are three or four methods that have clinically and experimentally been proven satisfactory.

As to closing the skin in a laparotomy wound with adhesive plaster, I have had no experience, but can not see what advantage it can have over a subcuticular suture.

La Grippe with Pulmonary and Cerebral Complications.

By MARIE L. GROTE, M.D.,

PONCA, NEB.

AS all are quite familiar with the history and epidemic nature of la grippe, I thought best to base my remarks upon a number of cases which have come under my observation during the last two years.

The first classification I speak of are those cases where we have, shortly following the invasion of la grippe, pulmonary and cerebral complications. After three or four days of the usual prodromal symptoms of general malais, anorexia, headache, aching throughout the body, especially of the back and limbs, an almost constant chilly sensation (not a decided chill), the temperature runs up to 103° or 104°F. , the pulse is quite accelerated, reaching 120 to 130 per minute, respiration 28 to 30 per minute, the skin is dry and hot and the bowels usually constipated.

We are called to see the patient for the first time, perhaps, because he has become very delirious, which has greatly alarmed his friends, who had hitherto not thought him very sick. The delirium is not of the violent form sometimes encountered toward the close of the scene in lobar pneumonia, here the patient suffers from great prostration almost from the inception of the disease. Upon examination of the chest we

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day of operation. I have my
best food for it undoubtedly

condition furnishes a more fertile soil for the specific bacillus of this disease.

In one of my cases of this type of la grippe the congestion of all the above-mentioned anatomical structures was so intense that the patient said her head felt as if it would "split in all directions," and I have no reason to believe she exaggerated in thus describing her symptoms. For four or five days there was a copious semi-coagulated discharge of dark blood coming from her nostrils, from both ears there was a thin watery discharge mixed with blood, which later became purulent, notwithstanding the frequent use of antiseptic solutions. Hearing became seriously impaired for several weeks. Upon examination of the chest, inspection revealed diminished motion of the right side, percussion elicited dullness of several small areas in the lower right lobe of the lung, there was a little bright-red blood in the expectoration a few days, the temperature and pulse fluctuated greatly, convalescence being established by lysis. The patient returned to her work (teaching) when her temperature had been normal for a week. Six weeks later she returned, complaining of a sharp pain in her right side which, upon investigation, proved to be a well-developed case of pleurisy with effusion. In this class of cases the treatment should be of a tonic and alterative nature.

[ROBINSON AND KINGSBURY BLOCK.]

Some Hints on the Management of Laparotomy Cases.

By FRANK A. GLASGOW, A.B., M.D.,

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THE non-surgical portion of the profession and even many of those performing surgical operations seem to be of the opinion that after a laparotomy has been properly performed any average physician is capable of looking after the case. No greater mistake could possibly be made. I have seen some cases and I have heard of many others that were

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lost from lack of the attention which only the operator could give.

I do not hesitate to say that the after-treatment of a difficult, complicated case requires more knowledge, skill and good judgment than it does to perform the operation.

In this paper I propose merely to state what I have found it advisable to do in laparotomy cases and also to warn against mistakes which I believe are too often made.

In the preparation of a patient for the operation a course of medicine, I believe, is seldom necessary. If the patient has been using morphine regularly I would advise strongly that it be continued; it has become a necessity for the nervous system, and besides, this is not the proper time to break up the habit. I have heard of cases where this sudden deprivation of morphine has contributed to fatal result. I have in former years often heard it said that a morphine habitue is a bad subject for operation; this was due to following the rule—"avoid morphine after abdominal operation." This excellent rule is not applicable to morphine cases. The condition of the kidneys should be investigated in every case; if there is any evidence of disease of these organs we should avoid ether. Often we find that the urine is of a high specific gravity and deficient in quantity; in this case, if there is no urgency for the operation, we should give plenty of distilled water. The only medicines which I would give are weak tea, infusion of digitalis or fluid extract stigmatea maydis, as diuretics. A saline laxative should be given in small doses to clean out the intestinal tract. I have found a mixture of magnesia sulphate, two ounces; sodium sulphate, three drams; sodium bicarbonate, one-half ounce; sodium chloride, three drams, to be a very good laxative; given in teaspoonful or dessertspoonful doses in a half glass of water every two or three hours, it acts very efficiently and does not seem to leave the patient constipated as does sulphate of magnesia alone. An enema should also be used before the operation.

I do not believe in starving a patient for several days prior to an operation. We know how weak, both in body and spirit, a healthy man gets when very hungry, we also know that a weak, despondent mental condition is antagonistic to prompt recovery. The patient should have a moderate quantity of liquid or soft food up to day of operation. I have my doubts about milk being the best food for it undoubtedly

leaves much fecal material; probably broths and gruels are better. I have very little use for the liquid prepared extracts of beef; the freshly-extracted juice from rare steak is far superior. The day of the operation the patient should receive some tea or coffee for breakfast, nothing more.

As for the preparation of the patient—a large vaginal douch of 1 to 2000 bichlorid of mercury solution should be given the night before and again the morning of the operation; this is for fear that it may be necessary to open the vagina; of course, if this occurs, the vagina should be scrubbed with soap and water, and again douched. The hair on the abdomen, mons and about the vulva should be shaved the day before and a thorough scrubbing given with soap and water, applied by means of a stiff brush; do not overdo this and cause abrasion of the skin; follow this with an alcohol wash and then, if you please, with bichloride—1 to 2000.

Years ago, in my zeal to get off all of the superficial epithelia containing microbes, I applied soft soap over the whole abdomen and left it on all night. The next day I found a very extensive raw surface and had to wait until this had healed before I could remove the ovarian tumor. With antiseptics, if too strong, you may cause a redness, which is a mild inflammation; this is detrimental as it lowers the vitality of the skin and makes the edges of the cut more liable to be attacked by any stray microbe.

At the time of the operation the abdomen should again be washed with water and alcohol. Washing at this time with turpentine is of advantage, not for its antiseptic effect, but because it leaves a thin pellicle on the surface and seals in all the germs in the surface epithelia; do not wash it off with alcohol but merely wipe off with clean cotton.

During the operation, of course, every antiseptic or aseptic precaution should be taken. I can not recommend too highly the wearing of gauze over the hair. The practice of allowing the nurse or doctor who attends to the sponges to hold them in the hand is bad. It is not necessary and it is adding a chance of infection. Let them pick up the sponges by means of forceps, and never touch them with the hands. The fewer who handle a wound or articles which come into contact with a wound the less danger there is of infection. You can not be certain of any one but yourself, and not always of yourself. I always consider it a favor if anyone calls

my attention to the fact that my hands have touched anything not absolutely sterile. You may possibly do this and not notice it.

For suture material, for some years, I have used almost exclusively catgut, and do not get suppuration. The catgut I buy ready prepared in alcohol in sealed tubes; these tubes are placed in with my instruments when they are boiled, this will destroy any germs which may have hatched since their preparation and also cleanses the outside.

The subcuticular suture for closing the abdomen is a great improvement on any suture passing through the skin, and I can heartily recommend it. We should cover every raw surface with peritoneum or cauterize it in order to prevent adhesions of the guts to it. We should stop all bleeding before closing the abdomen. In cases where you must drain, be sure that the gauze is not compressed where it comes through the abdominal wall. A long tube may cause death from pressure on a gut or, at least, a fecal fistula. I have never had such a case, but was present at an operation where it subsequently happened. If a long tube is used, see that the dressings are wrapped firmly around the outside so that it can not be pressed inward. I prefer to use a long continuous piece for packing, often in conjunction with a Mikulicz bag; when using several pieces, on removal, we often get hold of one of the undermost first, and only after using some force do we find out our mistake. A short glass tube first passed through the abdominal wall will protect the gauze from compression.

I would warn you against washing out the cavity from which you have removed the gauze; either the general cavity is not completely sealed off as soon as we expect or we have broken the seal in removing the gauze. I have had very severe abdominal pain ensue from attempting to wash out such a cavity—when using a double uterine canula, allowed to enter by gravity alone. I have seen the same thing happen when washing out after a vaginal hysterectomy, even a number of days after the operation.

If one should notice a rise of temperature and some sensitiveness over the line of incision, remove the dressing and feel the line of incision; if there is a thick hard place here, open down to it by separating the healed wound; wash out and drain, and it may not keep your patient in bed a day

longer than otherwise would be the case. I have not seen such cases for several years.

If you have had to pack the abdomen get the gauze out the second or third day, taking every aseptic precaution. I generally put in a narrow short strip of gauze for a day or so, then a spiral silver drainage tube, long enough to pass through the abdominal wall, and let it stay a few days. These cases need not be confined to bed any longer than those where there has been no drainage.

After a laparotomy I am afraid that we are apt to err on the side of starving a patient rather than giving too much. If the patient is very weak we should give nourishing enemata from the start; peptonized milk is one of the best. When this is prepared with pancreatin it decomposes very quickly in the bowel and what remains becomes very offensive. This certainly must be deleterious and can be easily prevented by adding one grain of salicylic acid to each dose of the prepared milk. Some nourishment can be rubbed in through the skin, as for example, peptonized milk or oil; in this way we can save the stomach very much.

One thing which troubles patients more than anything else after laparotomy is thirst; they call for ice or ice-water. In my opinion they should never be allowed either; neither ice or ice-water quenches the thirst, but on the contrary, increases it; the stomach fills up with cold water, which is not absorbed, but is later on rejected. Give tablespoonfuls doses of hot water; give occasional enemata of cool water or normal saline solution in quantities of one half to one pint; this will be retained and absorbed, and thirst will not be a prominent symptom. We never feel that a patient is safe until there has been a free action or a passage of flatus from the bowels. The stomach is often so irritable that no medicine except calomel will be retained; if ten or fifteen grains of calomel fail, we may give one or two ounces of sulphate of magnesia by high enema, give it in about six or eight ounces of water; in three hours follow with an enema of suds and turpentine. In giving high enemata I would by all means urge that you give them yourself; the soft tube which is generally used almost invariably coils up in the lower rectum; you can only determine this by feeling with your finger; with your finger you can guide the end of the tube up into the colon and only in this way be certain of giving a high enema.

One of my patients from whom I had removed a large cystic tumor vomited for three days. Intestines could be felt down in the pelvis. She was put in the knee-chest position, the intestines pushed up and an enema given while in this position. The result was very satisfactory, although previously even the high enema had failed; an enema given in the knee-chest position is as efficient as one given with a long tube. Sometimes the vomiting is due to the packing pressing on a gut; when you remove your gauze the vomiting will cease. I remember a case some years ago: The patient seemed to be doomed; about 4 o'clock in the morning, assisted by the night nurse, I removed all of the gauze, the vomiting ceased and the patient recovered.

I would suggest that you never put in any packing except between your two fingers, so that you may be certain that you do not get gut mixed with your gauze. The patient should not be allowed to rise from the bed for at least two weeks. I generally take my first dressing off at this time, and have her measured for a bandage, as soon as she gets this I let her up. This bandage should fit well, but should not be tight; it should have little or no elastic in it; it should be loose enough to allow the hand to be introduced under it when the patient is lying down. The bandage should be held down by means of two rubber bands or tubes passing between the thighs.

I can not work well with rubber gloves and do not use them unless I have soiled my hand shortly before the operation. Scrubbing the hands well with soap and water, then rubbing with chlorinated lime and carbonate of soda, with a subsequent dipping in 1 to 2000 bichloride solution, I find to be allsufficient. The lime remains under the nails and in the crevices about the nails and seals in or destroys germs in these localities. Of course, very much depends on your assistants.

[3894 WASHINGTON BOULEVARD.]

Tuberculosis of the Cervical Glands, Tendon Sheath and Hip Joints; Compound Comminuted Fracture of the Humerus, etc.

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TUBERCULOSIS OF THE CERVICAL GLANDS.

GENTLEMEN.—This patient was operated on last Thursday for extensive tuberculosis involving the glands of the left side of the neck. We found three distinct subregions involved by the disease. The most serious complications were met with in removing these glands. In the immediate vicinity of the parotid gland a whole chain of glands was removed, after which I made an extensive incision along the border of the sterno-cleido-mastoid muscle and removed another chain of glands which were in direct contact with the large vessels of the neck. These glands required great care in their removal as we were very near the carotid artery and the internal jugular vein. It was during this stage of the operation that I was able to show you these important structures at the base of the wound, and I insisted that in separating the glands from the vessels, dull instruments should be used, thereby avoiding an accident to the internal jugular vein. Another set of glands was found underneath the sterno cleido-mastoid muscle, and I was strongly tempted to make a preliminary transverse section of this muscle to expose the field of operation for the removal of these glands.

By the use of retractors we are able to reach the glands without preliminary transverse section of the muscle. We established free drainage in the lower angles of the wounds, sutured the wounds throughout, and sealed them with collodion and gauze, after which the ordinary elastic absorbent aseptic dressing was applied, and the neck immobilized with a few turns of plaster-of-Paris bandage.

The case is progressing favorably. Four or five days have elapsed since the operation was done. We shall remove the

tubular and gauze drains to-day, and simply reapply the same dry dressing. There has been only a moderate amount of primary wound secretion. In the large wound in the posterior aspect of sterno-cleido-mastoid muscle there is very little, if any, discharge. You will remember that during the operation a number of glands were ruptured, owing to the extent to which caseation had taken place. After all the tubercular glands were enucleated, the whole field of operation was iodoformized by pouring into it a 10 per cent iodoform-glycerine emulsion.

I will show you a section of one of the glands removed, taken from a part of the gland that had undergone but slight caseation, which would not be the case if the tissues for examination had become the seat of advanced caseation. There is a limited absorption recognizable in the staining material, pointing to beginning coagulation necrosis, which invariably precedes the process of caseation. In the center of the field you will see a very large giant cell, with numerous peripheral nuclei arranged in a radiate manner. In the left lower quadrant of the field you will notice a smaller giant cell exhibiting similar nuclear structures. The remainder of the field is composed of pre-existing stroma of the gland, with extensive round-cell infiltration.

TENDON SHEATH TUBERCULOSIS.

The next patient I show you was operated on a week ago to-day for tendon sheath tuberculosis involving the extensor communis digitorum. The disease developed secondarily to a primary wrist-joint tuberculosis, which yielded promptly to puncture and intra-articular iodoformization. The patient regained the use of his hand fairly well, but recently a swelling appeared over the posterior aspect of the wrist-joint and it was questionable whether the swelling indicated a bulging of the probable intra-articular tubercular focus, or whether it was an evidence of extension of the disease to the tendons overlying the wrist-joint on the dorsal side. We took it for granted that it was a tendon sheath tuberculosis, either in direct communication with the former tubercular wrist-joint, or that it developed as a secondary affection in consequence of the extension of the infection through the capsule of the joint without a communicating channel between the tendon sheath tubercular

product and the wrist-joint. We found the latter to be the case.

Under the most careful aseptic precautions the tendon sheath tuberculosis was exposed by a median incision over the dorsum of the wrist, the incision being made amply large for the purpose of exposing the swelling freely on all sides, when the sheath was opened. I pointed out to you the typical appearance of tendon sheath tuberculosis during its early stages. We found no indication of caseation. The tendon sheath was lined inside by massive granulations, the early products of tubercular inflammation. By careful dissection the entire tendon sheath of the extensor communis digitorum to the extent of about four inches was removed, the parts iodoformized, and I then furnished the exposed denuded tendon with a structure out of which, in the near future, a new tendon sheath will be formed; that is, I sutured over the tendons the deep fascia by employing a row of absorbable buried sutures. The external wound was closed in the usual manner throughout, making no provision for drainage, and, as you will note, the wound is healing kindly by primary intention. On palpation I find no evidence of any considerable amount of primary wound secretion, hence it was wise practice in this case to suture the wound throughout, making no provision for drainage, for the purpose of obtaining ideal wound healing by primary intention.

I want to show you the extent to which the patient has already regained the use of the fingers. One of the small tendons was cut during the operation. The tendon had become small by the extension of the tubercular process from the tendon sheath to the tendon itself, and in dissecting off the tubercular product from the tendon, the tendon was severed, and I resorted at once to primary tendon suturing. There is no impairment of motion of any of the fingers. The tendon has already united with sufficient firmness to respond to the action of the muscle.

The specimen I show you is a section taken from the tendon sheath removed, and it exhibits a histological form of tuberculosis that you will frequently meet with when the disease attacks tendon sheaths. You will notice in the field a very rich stroma of ordinary connective tissue, with very extensive round-cell infiltration. There are no indications of giant cells. You will look in vain for epithelioid cells lining this area of

tissue. You will find the loose connective tissue fibers deeply stained. It is a case of early tuberculosis involving the endothelial lining of the tendon sheath. It is too early to expect the presence of giant cells. In the course of time, as the disease increases in intensity, giant cells will usually form in the same manner and exhibit the same appearance as in glandular tuberculosis. This, then, represents simply a chronic inflammatory process so characteristic of the early stage of tubercular inflammation, particularly as it affects tendon sheaths.

CONTRACTURE OF TWO FINGERS

This patient was operated on last Thursday for a contracture of the ring and middle fingers, the result of a contracting scar following the healing of a very extensive surface defect of the palm of the hand. I excised this scar freely and resorted to Thiersch's method of skin-grafting to cover the entire wound surface. When the operation was done, I directed your attention to the fact that I considered it necessary to diminish the length of the web of the fingers affected by the contracted scar. I did so, excised the scar between the two fingers principally involved by the contracture, and paved the wound with Thiersch's skin grafts. Every one of these grafts has taken, showing already indications of the existence of a very satisfactory blood supply. We shall redress the wound in the same manner, and expect that after healing is completed the substitution for the tissue normal, elastic skin. I do not think there will be any tendency to recurrence of contracture in the future. We shall keep the fingers immobilized in a straight position until the healing process is completed.

COMPOUND COMMINUTED FRACTURE OF THE HUMERUS.

This boy was admitted to the hospital as one of my private patients. We found a very serious injury involving the arm, it being a compound comminuted fracture of the humerus, with extensive destruction of the soft tissues, so much so that the physician who brought the patient to the hospital feared that it would be necessary to amputate the arm. I showed you in connection with the lower fragment of the fracture, at about the junction of the upper with the middle third, that the bone was denuded to the extent of four inches, presenting the appearance of ivory, with the medullary cavity

empty. The upper fragment was embedded in granulations. Considering the youth of the patient and the somewhat satisfactory condition of the wound, the principal vessels being intact, I deemed it advisable to make it conservative effort, and did so the day after the patient was admitted to the clinic. I did what I stated I would do, and that is, I united the two fragments in the manner that I intended, because I found, when I studied the case carefully under the influence of the anesthetic, the condition of the two fragments was such that the metallic suture as a means of direct fixation was inapplicable. I therefore resorted to a method of treatment that I have made use of in number of cases with great satisfaction, namely, I applied an intra osseous splint for the purpose of effecting fixation at the seat of fracture. I considered in this instance that four inches of the lower fragment of the bone would undergo necrosis. I simply utilized that part of the shaft of the humerus as a mechanical support, relying on the periosteum to furnish osteogenetic material in the future which would eventually succeed in restoring the continuity of the bone, provided I could keep the two fragments in accurate contact and maintain for the necessary length of time efficient fixation. The two ends of the fragment were exposed. The upper fragment was embedded in granulations; the medullary canal closed by a limited mass of provisional callus. I freed the end of the upper fragment, opened the medullary canal with a chisel, brought the two fragments in close contact and then resorted to the use of the intra-osseous splint. In this instance I used a very small splint because the medullary cavity was comparatively small. These little splints I show you are the bones from the wing of a chicken. The medullary cavity was thoroughly cleared out laterally and fenestra were made in this splint. (Here Dr. Senn demonstrated the application of these little splints, and showed how efficient fixation could be maintained by them)

In the treatment of pseudarthrosis, or in recent cases of compound fracture, with a tendency to displacement of the fragments, this intra-osseous splint can not be too highly recommended. It can be made of bones of lower animals. For instance, in the case of a young adult the bones of a large rabbit would answer the purpose, the shaft of the long bone, clearing out the medullary canal thoroughly, making lateral openings, probably decalcifying the bone slightly, and then

using it as a direct splint by its insertion into the medullary cavity of both fragments.

This treatment was first originated by Biercher, but he used cylinders of ivory. I can see no reason why a hollow cylinder would not answer as well or better for a similar purpose. I have advocated the use of a hollow cylinder of ivory, or bone preferably, decalcified, with a number of lateral openings made for the purpose of affording avenues from the bone surrounding the splints into the medullary cavity for the penetration of granulation material. At the same time, in using bone, we do not tax the absorptive capacity of the tissues to the same extent as in the employment of the solid ivory cylinders of Biercher.

I am sorry that the seat of fracture has not been exposed in this case, so that I might give you an idea as to the technique of the operation I have described, and also show the present condition of the wound. I covered, apparently necrosed, fragment by suturing over it with heavy catgut the granulations. I immobilized the granulation tissue, making lateral incisions, being extremely anxious to furnish the apparently dead bone with living vascular tissue for the purpose of placing the parts in the best possible condition for the formation of an adequate involucrum.

TUBERCULOSIS OF THE CERVICAL GLANDS.

We have our usual allotment of operations for tubercular glands of the neck. This is an unusual case because the tubercular process is apparently limited to a single gland. We can exclude in this case a pyogenic lymphadenitis. This glandular swelling appeared slowly, and as softening has occurred only recently, there is no decided change in the overlying skin, as we see in cases of pyogenic lymphadenitis. I think I shall find in opening this abscess, which will be done by removing the overlying skin, that the caseous degeneration is complete and has already been followed by advanced liquefaction of the tubercular product. I find no additional glands involved. It is unusual to find the tubercular process limited to a single gland and reaching the extent of retrograde degeneration that it has in the case before us. I shall not attempt to make a clean excision, as it would be difficult to do so, neither do I deem it necessary. If I lay open the abscess cavity freely by excising the skin overlying the summit of the

swelling, I shall expose the tubercular focus freely, and the resort to the vigorous use of the sharp spoon which, in such cases, answers as an excellent substitute for the knife. I lift up the skin and now you can see the liquefied caseous material is already escaping. I open the abscess cavity freely by excising an oval piece of skin which corresponds almost to the dimensions of the base of the tubercular abscess. We have now its interior exposed, and I would like to have you notice the tubercular membrane which lines the abscess cavity throughout, and which we will find comparative easy to remove. I can easily scoop out this tubercular membrane. Nothing of that kind is ever seen in an ordinary abscess. This membrane will be thoroughly scraped out. I find the gland has been almost completely destroyed and what I am doing now is scraping out the para glandular abscess. I want to show you the most convincing proof of the tubercular nature of this abscess. I have scraped out the para-glandular tubercular abscess, and in the center of the floor of the scraped surface there is a depression leading down to the tissues, marking the point of the original involvement. Through this depression the glandular abscess reached the loose connective tissue around the gland, thus establishing a para-glandular abscess. I shall now use a smaller spoon with which to reach what remains of the tubercular gland first affected. If I should suspend the operation now, the result would be unsatisfactory, because I would leave remnants of the gland that were the primary seat of the tubercular process. I will ascertain the depth of this gland. I am satisfied now as to its exact location and depth from the floor of the scraped para-glandular abscess. I will scrape out this space with a small sharp spoon and remove, as I do now, a remnant of the gland almost completely destroyed. This has brought me down to a great level. The tip of my index finger is now on the carotid artery, so that the gland originally affected is one of the deep cervical glands. We have to be very cautious with the use of the sharp spoon in this locality, and I deem it necessary to make the scraping very thorough. We will disinfect the cavity with peroxide of hydrogen, then wash it out with a three per cent solution of carbolic acid. Finally we will pour into the cavity a teaspoonful of a ten per cent iodoform-glycerine emulsion, packing it with a strip of gauze, over which the ordinary absorbent dressing will be applied.

I can convince you now in connection with this case how imperfect the scraping is when you make a small straight incision. Great advantage is to be obtained by incising the skin to an extent equivalent to and corresponding with the size of the swelling. This is what we have done here. We opened the whole field freely, which gave us an opportunity with a sharp spoon to search for and remove every vestige of of tubercular tissue.

PUNCTURE, EVACUATION AND IODOFORMIZATION OF TWO TUBERCULAR ABSCESES.

I will now puncture, evacuate and iodoformize two large tubercular abscesses; one, an abscess that had its starting-point in the lower part of the spinal column at the junction of the last dorsal with the first lumbar vertebræ; in the other case, a tubercular abscess connected with a tubercular affection of the hip-joint. In this case we have already made one puncture, as in the other, but owing to imperfect liquefaction of the tubercular contents of the abscess we were not successful in making anything like a satisfactory evacuation. We injected two drams of iodoform-glycerine emulsion, it being five days since the first tapping, and we may expect to find that the iodoform-glycerine emulsion has already exerted one of its benign influences in the management of tubercular abscess, namely, liquefaction of the tubercular contents. I must again insist that in puncturing such an abscess the puncture should never be made at the summit of the swelling, when the skin has already undergone serious alterations by long-continued tension underneath and, perhaps, also by the extension of the tubercular process to the overlying skin. I am going to make the puncture at least an inch from the margin of the swelling. The first puncture was made at the point you see. To-day we shall puncture at a point very near the crest of the ilium. This abscess is about the size of a large orange. It is beneath Poupart's ligament. It has become superficial at the base of Scarpa's triangle. It is here that we generally expect wandering, migrating abscesses that have their origin in any portion of the bones of the brim of the pelvis.

With my left hand I draw the skin tense, displace it to a sufficient extent, I now select the point of puncture, push the trocar through the intact skin and advance in a forward direction until I am satisfied that the point of the instrument

occupies the center of the abscess cavity. I can feel through the intact skin the point of the instrument. I withdraw the stylet and we are reasonably sure now we will be able to evacuate its contents. The last time we were able to remove only a limited quantity of material, when the flow ceased and could not be re-established because the canula became blocked with masses of fibrin. This temporary blocking of the canula takes place to-day. It requires considerable pressure to force some of the fibrinous masses through the limited caliber of the canula. But we have evacuated more material than we did at the first puncture, consequently we have accomplished very much by this and the former punctures and iodoformization in having brought about by this simple and safe treatment, decided liquefaction of the tubercular abscess. I am making steady pressure in order to withdraw some of the abscess contents. You will notice that when pressure is removed the canula becomes blocked with masses of fibrin. I am very much pleased with the result of this tapping. I assure you that we have removed about one-half of the contents of this large abscess cavity, and I show you in this pus-basin typical tubercular so-called pus, which is the liquefied tubercular product.

We will now inject about two and a half drams of iodoform-glycerine emulsion. You will notice that I removed the canula as quickly as it was inserted, and we will now seal the little puncture with collodion. Nothing escaped through the puncture. Some of the material would escape if I had punctured the summit of the swelling.

DOUBLE TUBERCULAR COXITIS.

This is our second case of tubercular abscess of enormous size that communicates with the corresponding hip-joint. This patient is the subject of double tubercular coxitis. For the hip-joint on the right side I found it necessary, two years ago, to perform typical resection. Recovery was slow but extremely satisfactory. Even at that time the patient complained of some symptoms which indicated beginning tuberculosis in the opposite hip-joint. The disease was very insidious, comparatively painless, and finally gave rise to this enormous tubercular abscess which has presented itself in the gluteal region. I have already made one puncture. I found it impossible to evacuate but a small quantity of the tubercular contents,

owing to imperfect liquefaction. We will see what we can accomplish by puncture to-day.

I know of nothing more satisfactory in the practice of modern surgery than the treatment of tubercular abscesses (that have their origin in bones or joints) by puncture, evacuation and iodoformization. It is strange that the American profession is so slow in grasping and utilizing this great advance in the modern treatment of surgical tuberculosis.

On a former occasion I punctured the lower segment of the abscess. I will select a place to-day directly over the gluteal region. Again, I render the skin tense by drawing it a little to one side, and will introduce the trocar at a safe distance from the abscess cavity, plunge it in the direction of the center of the swelling, as I am doing now. The other day we verified the clinical diagnosis in the presence of the class. To-day, without any pressure, a considerable quantity of tubercular material is escaping. You will again see what interrupts the flow. We have a blocking of the canula with the fibrinous masses so constantly found in all cold tubercular abscesses, rendering there evacuation quite difficult. One of the great merits of this iodoform-glycerine emulsion is that it liquefies the tubercular product very promptly. I am squeezing out now large masses of fibrin. I shall not use unnecessary pressure in effecting complete evacuation, which to-day would be impossible. We will inject the iodoform-glycerine emulsion now, and at the next sitting we will be able to evacuate the cavity more satisfactorily. We will use three drams of the iodoform-glycerine emulsion in this case. I withdraw the canula and you will again note there is no escape of the material injected. This wound will be sealed with collodion. If I can succeed in evacuating the abscess cavity to a desirable extent, I am in the habit of applying pressure over the cavity with a view to bringing the surfaces of the abscess cavity in contact. Our experience with this method of treatment in the management of joint and bone tuberculosis in general is very satisfactory indeed. Many of these abscesses that originate from a tubercular focus in the spine are amenable to successful treatment by one or two or three tapplings. Three things point to the favorable action of the antibacillary agent in the treatment of such abscesses:

First, active response to the antibacillary agent injected

(iodoform), and that is a rise in temperature which takes place within six hours after the injection has been made.

Second, liquefaction of the tubercular material.

Third, as the process of healing is established, we find that instead of evacuating the familiar so-called tubercular pus we evacuate something which resembles synovia.

Whenever you observe these changes in the treatment and management of tubercular abscesses, you may rest assured that eventually the treatment will be a success.

Koch's Claims to be Tested in England. — According to press reports, King Edward of England, has appointed a commission to determine whether animal and human tuberculosis is identical, whether animals and humans can be reciprocally infected and under what conditions, if at all, transmission to man occurs, and the means of combatting it. The Commissioners are Sir Michael Foster, Secretary of the Royal Society; Dr. Sims Woodhead, professor of pathology in Cambridge University; Dr. Harris C. Martin, Professor J. McFadyean and Professor R. W. Boyce. The Commission has been granted the fullest powers and facilities, and the members have been urged to make a prompt report.

Consumptives Not Wanted.—Competition among the hospitals in New York and their eagerness to show the lowest possible death rate has led a number of the denominational and private hospitals of the city to refuse entrance to patients afflicted with chronic and incurable diseases. Owing to the increase in the death rate by consumptive patients, St. Luke's Hospital in New York has about decided to do away with the two wards containing forty two beds which have been maintained for the treatment of consumptives. The death records of the hospital have been greatly raised by the high mortality of consumptive patients and the trustees are reported to be in favor of discontinuing the department, in which case the endowments by which the wards were founded will be returned the donors. The consumptive wards are always filled with patients.

EDITORIAL.

THE MEDICAL AND SURGICAL TREATMENT OF PRESIDENT MCKINLEY.

The death of our honored and deeply-lamented President illustrates the powerlessness of the best medical and surgical science to repair the ravages of injury or disease when Nature itself refuses to further share in the process. A careful review of the treatment of President McKinley from our present sources of information evidences the fact that he had in every way the benefit of the best skill and attention that is possible for medical science in its present light to afford. Had mistakes been made, it would have been only human, but such are not apparent to us at this distance and, moreover, it is not ours to criticize but to commend those who, at a moment's notice, took up the responsibility of saving to his country and to his family our stricken Chief Executive and who gave their best efforts to that end, and though these were unavailing they are deserving of the Nation's gratitude.

The early closing of the wounds in the walls of the stomach in a well-equipped emergency hospital and hence under the most favorable circumstances portended in no small measure to a favorable result. The recovery in due time from the effects of shock from the injury and that of the operation was gratifying, and the progressive amelioration of the symptoms during the first five days gave confident hope of a complete recovery. The heart's action which at all times gave cause for apprehension improved after the second day until the fourth, when it showed a tendency to again become more rapid. At one time the pulse had fallen to 104 to the minute and in view of the statement of the President's family physician (according to the daily press) that the distinguished patient had had, following an attack of la grippe, an abnormally rapid pulse, this feature was, therefore, not necessarily alarming, particularly as the heart's action showed a tendency to improve.

The hope of the Nation and of the world for his complete recovery

were not, however, to be realized and the gangrenous process which apparently followed the entire course of the bullet had begun probably as early as the latter part of the third day and of this the quickening pulse, the watch-dog of the system, gave notice. Had this condition been recognized in time it is doubtful if a secondary operation would have obviated the fatal issue. The debilitated tissues, devitalized by the impact of the assassin's bullet, were unable to again take on nutrition and mortification was the necessary result. Had the patient sufficient strength to have successfully undergone a second operation it is extremely improbable that he could have survived the loss of a large portion of his gastric wall such as would have necessarily had to be removed.

The work of the surgeons and those in attendance at the bedside of the President is commendable in the extreme. Their effort were timely, thorough and complete. They could not have done differently, and though unjust criticism may be cast upon them they can remain content with the consciousness that they did the best that could have been done and they may be assured that their efforts will receive the commendation and approval of the majority of their professional brethren. When the limit of professional ministrations have been reached man must defer to his Maker and abide the result.

THE PRELIMINARY EDUCATION NECESSARY TO THE STUDY OF MEDICINE.

It is now the period of the year when the large number of young men who have decided to take up the profession of medicine are either entering upon its study or are making plans for their preliminary work preparatory to that end. To those who feel that they are not yet qualified to begin its study comes the question of determining the character and extent of their preliminary education for this purpose. This is indeed a matter for careful consideration because the ever-widening scope of medical science demands a thorough preparation, a broad and comprehensive ground-work in the matter of education in order to receive the full measure of the benefit in his later pursuit of the varied and extensive knowledge of medicine which the progressive physician of to-day must possess.

For the well-equipped physician a college education is a prime

necessity, and a college graduate has much the advantage of his less fortunate brother both in the pursuit of his medical studies and his later professional life. It gives him the benefit of a better mental training, enlarges the scope of his knowledge, broadens his character and fits him to meet successfully all the varied requirements of his later life.

The rapidly-expanding scope of medical science requires a longer period of study to acquire a working knowledge in all its departments. To compensate for the additional time spent in the medical school a number of the leading colleges and universities have adopted* the elective system by which the prospective student of medicine may if he elects, take in his collegiate course only such studies as will have a bearing upon his future professional work. This is of great advantage in many instances but, as a rule, the broader the foundation the grander the superstructure, and what is lost in the matter of time is made up in the general culture thereby gained.

The crying need in the study of medicine at present is not so much a larger number of branches studied, with a necessary increase in the number of professors and instructors, as that of a more stringent requirements as regards a general education preliminary to the medical course. Every applicant for admission to a medical school should be compelled to give evidence of possessing a good English education and this should be tested by an entrance examination conducted either by the State, such as obtains in the State of New York, where a student's certificate from the Regents of the University of the State of New York is required, or by the medical school itself. This should be impartial and thorough. The plan of admitting students on presentation of a bachelor's degree from a literary college is not a good one. Such degrees are a variable quantity and as such establish no well defined standard of efficiency and, as a rule, should best be ignored.

Every applicant for admission to a medical school should be compelled to pass a rigid entrance examination to determine the amount of his preliminary education and the question of his fitness for the study of medicine. The physician of to day must be a broad-minded, well-educated and a cultured man, and the young man aspiring to become such an one can not lay too broadly the foundation in a thorough preliminary education.

PROGNOSTIC PESSIMISM OR OPTIMISM?

It is to be regretted that almost immediately following the death of President McKinley there should have appeared in the daily press, in the nature of interviews, statements from several of the surgeons in attendance criticising the actions and opinions of each other. That they should have, even in an unguarded moment, allowed themselves to give public utterance to such expressions is unfortunate, to say the least. In every step in their care and attention to the distinguished patient they had the moral support and indorsement of the entire profession, but their unfortunate statements of crimination and recrimination following the President's death have filled their professional brethren with humiliation and disgust. Such actions on the part of the foremost men of our calling serve only to lessen the respect for us of which the public in general has already too little, and the public expression of a personal opinion regarding a professional associate, which at all times is the acme of bad taste, and at such a time as this, is unpardonable. These unfortunate remarks were denied in a later statement that was given out when doubtless saner thoughts prevailed and which was eminently proper, but the earlier interviews had every evidence of authenticity and had irrevocably worked their mischief.

It was stated that one of the distinguished consultants had been too confident of a favorable termination and an earlier convalescence than the condition of the patient, in the opinion of the others, warranted and that the aforesaid distinguished consultant so expressed himself freely within the auditory range of the ubiquitous reporter. It was also insinuated that this optimistic surgeon was called at the request of powerful financial interests for the purpose of supplying encouraging reports and thus avert a panicky condition in the speculative world, but this insinuation is unworthy of credence.

The differences of opinion which were freely aired after the death of the President resolves itself, in fact, into a question of prognostic optimism or pessimism. Whether these optimistic utterances were unwarranted by the condition of the patient at the time they were made can not be decided by those not in attendance or not entirely familiar with all the phases and conditions as there existed. It was claimed in some of the criticisms made, that the heart's action did not warrant a favorable prognosis, but with a pulse that in health best ab-

normally fast, this feature was one for which naturally allowance was to be made and other things being equal the improvement noted in this was very encouraging.

Optimism is never a mistake and under no circumstances is it so acceptable as at the bedside of the patient. The optimistic medical practitioner is the one usually who works harder, fights longer and more persistently for the patient's welfare and is generally the one who is the most successful in the end. That the distinguished New York consultant's statements were influenced by or were the result of other than an honest personal opinion no one doubts for a moment who has enjoyed the pleasure of his acquaintance. If his hopefulness allayed a condition of nervousness and uncertainty in financial centers this certainly was not objectionable and, while at the same time, it was a message of cheer to an anxious nation and a sympathizing world. That later complications prevented the realization of his expectations in no wise reflected upon him in his expressed belief in the President's recovery.

A difference of opinion on the part of some of his associates at the case was eminently right and proper, but the time for the expression of this difference was before the death of the patient, after that it was too late. Their unfortunate statements are to be deplored.

SUBSTITUTION AND OTHER EVILS.

The evil of substitution, that perennial crime of the day and night blooming variety, continues to bud, blossom and bear fruit in endless form in all places, climes and seasons, regardless, apparently, of every effort made to check its spread. It owes the pestilential character of its existence to a trait of human nature that is possessed by a large majority of the inhabitants of this mundane sphere. A trait which shows itself in the desire to get something without giving adequate return therefor—without giving a just *quid pro quo*. It is the negative expression where the positive trait of honesty in the moral character is wanting. There are many dire evils that afflict the medical body politic and in not a few of these the profession is a sufferer at the hands of those who should be its friends. The betrayal of the confidence of the profession by the druggist who substitutes is probably one of the worse offences which a leniency on the part of physicians

allows too frequently to pass unnoticed, but there are others of a slightly different nature which are nearly as bad.

Not every druggist is dishonest. In fact a large majority of them are men of the highest integrity and are above suspicion, but there are many that are unable to withstand the temptation which the opportunity to substitute offers, and when once begun is likely to be continued. The attempts to combat and restrain this evil have been many but are unavailing. The best weapon, possibly, is that of publicity. When substitution is known to have occurred it is the duty of the physician to warn his patients of that fact and to report the name of the offender in the meetings of medical societies so that other physicians may, thereby, be warned.

Official Report of the Autopsy Upon the Body of President McKinley.—The following report of the autopsy upon the remains of President McKinley was issued September 14th. The bullet which struck over the breastbone did not pass through the skin and did little harm. The other bullet passed through both walls of the stomach near its lower border. Both holes were found to be perfectly closed by the stitches, but the tissue around each hole had become gangrenous. After passing through the stomach the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the kidney. This portion of the bullet track was also gangrenous, the gangrene involving the pancreas. The bullet has not yet been found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt at repair on the part of Nature and death resulted from the gangrene which affected the stomach around the bullet wounds as well as the tissues around the further course of the bullet. Death was unavoidable by any surgical or medical treatment and was the direct result of the bullet wound.

[Signed]

Drs. Harvey D. Gaylord,
Herman G. Matzinger,
P. M. Rixey,
Matthew D. Mann,
Herman Mynter,
Roswell Park,
Eugene Wasdin,
Charles G. Stockton,

Edward G. Janeway,
W. W. Johnson,
W. P. Kendall,
Surgeon U. S. Army,
Charles Cary,
Edward L. Munson,
Asst. Surgeon U.S.A.,
Hermanus L. Baer.

FOREIGN CORRESPONDENCE.

The Treatment of Ruptured Ectopic Pregnancy.

About a year ago Professor Hector Treub, of Amsterdam, made inquiry among the Dutch physicians regarding their method of treatment of ruptured ectopic gestation and the results obtained; 1750 replies were received which furnish some interesting data. These 1750 physicians had observed 247 cases of ruptured ectopic pregnancy and to this number may be added an additional number of 84 cases which Professor Treub has himself collected, making a total of 331 cases in all of this condition.

In 162 of the 247 cases observed by the Dutch physicians, excepting Treub, there were initial symptoms of a serious character (marked anemia, collapse, etc.), while in the remaining 85 cases there were no unusual symptoms. The proportion, therefore, of the cases having serious initial symptoms to those that were less alarming, is about 2 to 1, in those reported outside of Treub's clinic.

In Treub's cases, however, the relation was just the reverse, 18 of the 84 cases began with serious symptoms, while in the remaining 66 such were not noticed, giving a relative proportion of 1 to $3\frac{1}{4}$. As we can not well admit that the less serious cases are sent in preference to the clinic we may conclude that in practice, a great many mild cases are not recognized, as is often proven in the clinic when these cases are brought in with the diagnosis of abortion. If the same relation should be observed in private practice as in the hospital where it is 1 to $3\frac{1}{2}$, then there should have been observed 567 mild cases in accordance with the 162 with serious initial symptoms. Likewise, also, the 1750 physicians should have treated 729 cases (recognized or not) or in other words, every five physicians should have seen two cases of ectopic gestation.

Of the total number, 42 died as a result of this accident, or a mortality of 12.6 per cent; 30 of these died from hemorrhage immediately following the rupture, while 12 died later from infection, chloroform intoxication, shock after operation, etc.

In 15 cases pregnancy was beyond the first. In 7 of these there was rupture of the sac with fatal termination in each case.

In considering these cases Treub retracts his former advice to await with the operation until the child is viable when in the second half of pregnancy and the sac is unruptured. This advice was given as the result of an opinion which he had formed that a rupture was not likely to occur after the fifth month, an opinion which is annihilated as a result of this investigation.

Another object sought in this investigation was to determine which method of treatment gave the best results, whether to operate as soon as possible after the rupture or to wait as long as possible. Out of 30 fatal cases, death resulted in two hours after rupture in 10 instances, thus practically before any treatment could be tried. In 8 cases death followed in from two to twenty four hours after the rupture, and in 5 after a longer period. Seven of the 30 cases were operated upon.

In the total number of 331 cases reported there were 180 cases with serious initiatory symptoms. If from these be deducted the 10 above-mentioned cases in which death resulted before any treatment could be tried, there remains 170 cases of a serious nature amenable to operative measures. Of these 29 were operated on as soon as possible with a fatal result in 9, or a mortality for immediate operation of 31 per cent. Of the remaining 141 serious cases which were not immediately operated upon, 13 died, giving a mortality of 10.8 per cent of those not immediately operated upon. The mortality rate is thus markedly increased by operation in the first few days after rupture.

Of 292 cases (141 serious and 151 less serious) which were not immediately operated upon, the operation was performed later in 159 because of some secondary indications, as fever, constant pain, etc. Of these 50 were operated upon in Treub's clinic without a death; the remainder by other surgeons with 10 deaths, giving in all a mortality of 6.3 per cent for the later operation. Of the 141 serious cases not immediately operated upon 19 died, or 13.5 per cent; 13 of these died immediately and 6 afterwards. Of the 292 cases which were not immediately operated upon 23 died, or 7.8 per cent, while the mortality of those immediately operated upon is 31, as shown above.

Although the number of cases is not large it clearly shows that immediate operation after the bursting of the sac should be deferred. On the contrary the immediate operation is indicated when the sac is intact, and also when pregnancy has advanced to the second stage.

Tuberculosis of Human Beings and of Cattle.

Following the well known studies of your countryman, Dr. Theobald Smith, Dr. D. A. de Jong, a veterinary surgeon of Leiden, has, since 1899, been pursuing the same line of investigation as that reported by Koch at the British Congress for Tuberculosis, the publication of which has aroused such an extensive discussion. In a few months Dr. de Jong's complete report to the Dutch Minister of the Interior will be published, but I am at this time able to give his very interesting conclusions from his work, which is now practically finished. They are as follows:

1. Tubercle bacilli taken from man can produce tubercular processes in cattle.
2. Human tuberculosis can produce tubercular processes in domestic animals other than cattle (sheep, goats, dogs and also monkeys).
3. The tuberculosis in the above-mentioned animals caused by the tubercle bacillus of human beings is, however, generally less severe than that caused by the tubercle bacillus of cattle.
4. We may therefore conclude that the tubercle bacillus of cattle have in general a greater virulence than the bacillus of human tuberculosis.
5. The increased virulency of the bovine tubercle bacillus as observed in cattle, sheep, goats, dogs and monkeys, will likewise have increased virulency in human beings.
6. Human beings are to be regarded as a less dangerous source of infection to cattle than cattle are for men.
7. Tuberculosis in cattle requires more rigid measures from an hygienic point of view than was formerly thought necessary.

These conclusions, as will be observed, are directly opposed to those of Koch and as they are the results of the labors of an experienced, skillful, prudent and educated investigator, they are of great importance. Koch's opinion on this subject, moreover, is entirely rejected by many learned Dutchmen.

Amsterdam.

VAN DER HOEVEN.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of May 2, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. BRANSFORD LEWIS read papers (see pages 161 and 171 this issue) on

Ureter Catheterism in the Male: A New Ureter-Cystoscope.

AND

**Report of a Case of Obstructive Prostatic Hypertrophy,
with Remarks on the Bottini Operation.**

DISCUSSION.

DR. H. W. SOPER thought Dr. Lewis could claim many points of originality in the instrument shown, which commended itself for its simplicity and practicability.

DR. E. W. LEE has never been able to catheterize the male ureter successfully. He had experimented with the various known for this purpose but without success. The instrument shown by Dr. Lewis gave positive proof of the catheter entering the ureter, and the introduction of a catheter into the bladder with the ureter-cystoscope in place, would draw the urine from the other ureter; this he considered very important. The instrument he thought was ideal.

In the case operated on by the Bottini method he thought the proper course had been pursued; he thought this operation indicated wherever there was a chronic enlargement or engorgement of the prostatic gland. Where there is a pedunculated condition of the middle lobe the Bottini operation is not indicated; in such cases the operation should be performed through the peritoneum or by the suprapubic method.

DR. P. J. HEUER had seen Drs. Bryson and Carson operate with the best instruments known and the success of each was practically a failure in all their ureteral operations on the male subject.

The speaker felt that Dr. Lewis had accomplished something en-

tirely new and was to be congratulated. The work done by detailed by Dr. Lewis might be accepted as showing the practicability of the instrument.

DR. JOS. L. BOEHM had been personally interested in Dr. Lewis' achievement and knew that every statement made in regard to the work accomplished with the instrument was borne out by facts. He had been present at several cases where the ureters had been successfully catheterized. He had previously seen good surgeons attempt the catheterization of the ureters with the various instruments on the market but in all cases their attempts had been practical failures. With Dr. Lewis' instrument success was readily accomplished.

The Bottini operation described was a remarkable success. He assisted Dr. Lewis at several of these operations, and felt that this operation should establish the superiority of the Bottini operation over other methods for certain cases of hypertrophied prostates. Dr. Freudenberg, of Berlin, before the International Congress of Surgeons, in Berlin, April, 1900, said the method of air-inflation of the bladder was popularized by Bransford Lewis. Had it not been for this method he hardly thought the Bottini operation could be performed so successfully as it is.

DR. LEWIS, in closing, said he greatly appreciated the cordial reception given his demonstration. He regretted the absence of the patient operated upon, but an attack of sciatica prevented his being present. While he believed in the Bottini operation for certain cases, yet he did not think it would answer in all cases of hypertrophied prostate. Early in its career he performed this operation in a certain case; there was some improvement but he felt that it was a failure. He asked the patient to allow him to do a prostatectomy but the man had seen this operation done during his stay at the hospital and declined; later, however, he did permit another surgeon in the city to perform this operation by the suprapubic route. A pedunculated obstruction was found which was removed and entire relief followed. But the Bottini operation is indicated sometimes. If the case reported had been given chloroform he felt that the patient would have died in twenty-four hours. If the operation had been performed through the suprapubic route he thought death would have occurred in two or three days.

DR. GREENFIELD SLUDER demonstrated

Specimens Showing Explanation of Non-Suppurative Nasal Headache Referable to the Middle Meatus of the Nose.

DR. JOHN GREEN, JR., said these cases are especially interesting to the ophthalmic surgeon because it is to him that these patients come or are referred by the general practitioner after the latter has exhausted his efforts at relief. He had the history of a case which had been handled conjointly by Dr. Green and Dr. Sluder, and the speaker had been able to observe the case throughout.

The patient was a young married woman giving the following history: About eighteen months ago, during the last months of pregnancy, she found difficulty in reading; she had never been troubled previously. There was a "feeling of strain" on attempting close work. Since then the eyes had pained continuously and there was a "heavy feeling" in the head especially in the frontal region; the sensation was described as a "tension." Visual tests showed a slight degree of manifest hypertropia, R.E. Hm. 1, V. $16/18$; L.E. Hm. .5, V. $16/18$. Various tests failed to reveal any astigmatism. Maddox test disclosed a trace of homonymous diplopia and slight vertical diplopia image of the left eye about one inch above that of the right eye. Correction of the refractive defect failed to give relief.

She had been in charge of a competent ophthalmic surgeon, of Nashville, Tenn., who told her "one eye was higher than the other" and advised an operation—presumably the division of one of the recti muscles. It was then discovered that she had marked tenderness of the orbit in the region of the pulley of the superior oblique; this seemed about equal on the two sides, which is unusual, as in these cases the tenderness is more marked on one side than on the other.

The case was then referred to Dr. Sluder, who discovered a closure in each middle meatus. Topical applications with a view to shrinking the membrane were instituted. Almost immediately the patient found relief; the feeling of tension disappeared, the constant pain in the top of the head became less severe. The improvement has been continuous and uninterrupted, and the patient free from pain in the eyes or headache.

Many of the cases show an insufficiency of one or other of the recti muscles and are compelled to use prisms in order that they may be able to use the eyes at all. After nasal treatment the prisms can be discarded and the ability to use the eyes is very markedly increased.

REPORTS ON PROGRESS

MEDICINE AND THERAPEUTICS.

Kak'ke, or Beri-Beri.

Baron Y. Saneyoshi (*Sci-I-Kwai Medical Journal*, May 31, 1901) concludes from his study of this disease that it is not of parasitic origin, nor is it infectious, but that it is caused by a diet lacking in proteids, and usually by one consisting entirely of rice. It may occur in any part of the world where rice forms the sole article of food,

The Therapeutic Value of Adrenalin Hydrochlorid.

Dudley S. Reynolds (*American Medicine*, July 6, 1901) concludes after 1222 experiments that this substance represents the active principle of the suprarenal bodies and is in every way superior to every other preparation of them. For local application to the eye he employs a solution of 1-5000 to 1-10,000; in epistaxis a solution of 1-1000.

Pilocarpine Hydrochlorate in Croup.

S. E. Wertman (*Ibid.*) after having had three fatal cases of membranous croup in which antitoxin was used, administered pilocarpine hydrochlorate hypodermically in five cases, all of which recovered. The dose employed for a child three or four years of age was $\frac{1}{32}$ gr. In only one of the five was it necessary to give more than one dose.

Maternal Impressions do not Cause the Stigmata of Degeneration.

Charles E. Woodruff (*Ibid.*, July 27, 1901) presents in this article a strong argument against the popular idea that maternal impressions during pregnancy are influential in producing deformities of the fetus. These deformities are all of the character of stigmata of degeneration and occur in the children of degenerates irrespective any alleged impression. When the deformity occurs following an impression it is in the nature of a coincidence and not a result, the few coincidences being noted, often with exaggeration, the many failures being neglected.

Deformities occur usually in the children of neurotic mothers, who again are most susceptible to "impressions."

A consideration of the development of the embryo will show that the deformities supposed to be a result of maternal impression usually originates at a period prior to the alleged impression, and often before the mother is aware that she is pregnant.

A woman, two and a half months pregnant, saw a monster preserved in a jar, and aborted at four months with the same kind of a monster. This deformity had been in existence at least one month before she had her impression and it is likely she would have aborted anyhow.

The most profound deformities, such as double monsters, have their origin in the first week or two while the ovum is leading a wholly independent existence, and when, therefore, a maternal impression could have no possible influence.

Some Tropho-Neuroses, and Their Relation to Vascular Diseases of the Extremities.

B Sachs (*Philadelphia Medical Journal*, June 29, 1901) considers that erythromelalgia, akroparesthesia, Reynaud's disease and even scleroderma are closely related and often merge into one another. They attach importance to the vascular changes, arterio-capillary degeneration is usually found, considering this at least equal in importance to the degeneration of the nerve fibers and perhaps the cause of the latter.

Three cases are reported in which examination of the tissues was made and degeneration of blood vessels as well as of nerve fibers found.

Puerperal Insanity.

Edward B. Lane (*Boston Medical and Surgical Journal*) accords with modern psychiatry in denying that the term "puerperal insanity" defines a particular variety of mental disease. No doubt insanity occurs not infrequently in connection with the puerperal state and it is also a matter of common observation that this state, or rather various morbid conditions accompanying it, act as exciting causes of insanity. But as the derangements are various so also are the forms of mental disturbances resulting from them, and these should be classified according to their symptoms and causes.

The Influence of Food on the Course of Experimental Uremia.

Alexander Strubell (*Wiener Klin. Wochens.*, July 18, 1901) concludes from the result of experiments on dogs from which he had removed the kidneys :

1. Uremia in animals is not characterized merely by narcosis, as Limbeck maintains, but is often accompanied by strong convulsions.
2. It appears that the kind of food administered exerts an influence upon the progress of the uremia, since an animal fed upon carbohydrates survives longer than one fed upon nitrogenous food, or one not fed at all.
3. That uremia in the human subject pursues a course similar to the experimental uremia in dogs and, consequently, that a diet of carbohydrates is preferable for such patients.

HÖGE.

NEUROLOGY.

A Case of Peripheral Pseudo-Tabes With Exaggerated Reflexes.

C. K. Mills (*Journal of Mental and Nervous Diseases*, August, 1901) reports the case of a man, 75 years of age, who began to show weakness in the right leg six years previous to admission to hospital. Two years later ataxia of rotation appeared, accompanied by dull aching and occasional lightening pains in the legs. Tactile and pain-sense were normal ; knee-jerks increased, other reflexes about normal. Later, ataxia increased ; left pupil responded to light and accommodation, the right pupil not to light and poorly to accommodation ; the arms became ataxic, with spastic rigidity ; grip fairly good. The patient died with nephritis and pulmonary edema.

Examination by Dr. Spiller showed the spinal cord to be practically normal, nothing to explain the symptoms present during life. The left internal plantar nerve was much degenerated and muscles from the sole of the left foot contained many bundles of atrophied muscle fibers. The nerve bundles within the muscular tissue were much degenerated.

Dr. Spiller reported to Dr. Mills the case to be one of degeneration of the peripheral ends of the nerve fibers with some degeneration of the muscles.

A Case of Astereognosis Resulting from Injury of the Brain in the Superior Parietal Region.

William H. Teller and F. X. Dercum (*Ibid.*) report a case in which there was a severe injury inflicted by a baseball bat one half an inch behind the fissure of Rolando. Paralysis of the right leg, arm, side of face and tongue were present. A depressed piece of bone nearly two inches square was raised; a clot was removed which had extended two inches into the brain-substance and about a half teaspoonful of brain-matter came out with the clot. The paralysis rapidly disappeared almost entirely but astereognosis was complete. Spools, thimbles, penknives, etc., failed of recognition in the right hand; perception of heat and cold was slow. The brain tissue was injured in the region of the superior parietal lobule, posterior to the motor area and the very slight paralysis remaining shows the motor area itself to be very slightly disturbed.

Meniere's Disease.

S. McCuen Smith (*Philadelphia Medical Journal*, August 17, 1901) says that this disease is a very rare one, defining it as apoplexy of the labyrinth, primary in its inception, occurring suddenly in one free from previous ear trouble and in excellent general health. He quotes Babinsky and others to the effect that the majority of cases involve basilar injuries or communicated pressure.

In many instances an injury to the brain substances proper, rather than to the semicircular canal, is unquestionably the cause of an inability to move in a forward direction.

He says it is desirable that "Meniere's Symptoms" should have proper recognition but the term "Meniere's Disease" can not be used, as at present, without adding to and perpetuating the existing confusion.

The Knee-Jerk in Chorea.

Agustus A. Eshner (*Ibid.*, June 8, 1901) quotes Gordon's description of a peculiar knee-jerk sometimes found in chorea and verifies Gordons statements by some observations of his own.

The phenomenon is not constant but distinctive when present.

With the patient recumbent and the knee-raised, while the heel rests on the couch and the muscles are relaxed, the patellar tendon is struck; the foot rises but instead of falling back immediately it re-

mains suspended for a variable time, then sinks slowly back to its original position. Sometimes sluggish descent follows ordinary ascent. Sometimes following the ordinary knee-jerk the foot begins to descend and is caught in midair and is held or even rises to a higher level than was reached in the first jerk. Sometimes the knee-jerk passes at once into rigid extension of the extremity.

Some Observations on the Treatment of Acute Insanity in General Hospitals.

Daniel R. Brower (*American Medicine*, August 17, 1901) in a short article giving some of the history of the treatment of insanity, says :

1. Most insane asylums are too large, considering that they contain both acute and chronic cases. It is physically impossible for the medical superintendent to individualize the work; he must intrust a great part of the medical care to his subordinates.
2. They are too far from the homes of many of the patients.
3. The admission is by cumbersome, antiquated and unscientific methods, often subjecting the patient to a severe ordeal that sometimes does serious damage, physically and mentally, and diminishes proportionately their chances of recovery.
4. Sometimes they (the hospitals) are degraded to the position of political machines, their organization used to carry elections, to defray campaign expenses and to reward those who have rendered some special party service.

In the presence of these objections, delay is frequently experienced in inducing the family to place their unfortunate member promptly under hospital treatment, and the prognosis is thereby less favorable.

Dr. Brower says he has for twenty years treated acute curable cases in a general hospital and makes a plea for their more frequent admission, arguing that there is no scientific reason why a case of brain disease, producing insanity, should be excluded and one producing hemiplegia and aphasia admitted.

The Recognition of Tabes Dorsalis.

Theodore Diller (*Ibid.*, June 1, 1901) offers a useful article showing how recent is our knowledge of this disease and that much work may yet be done toward its elucidation. While the most striking

pathological changes are found in the posterior columns, the posterior nerve roots, with their attached ganglia, are as constantly involved in the same degenerative process. The peripheral sensory neuron, with its cell in the ganglion of the posterior nerve root and its process extending downward to the skin, muscles, joints, etc., and constituting the sensory nerve, and its process extending inward to the nerve-cells of the cord or upward in the columns of Goll and Burdach to the nuclei gracilis and caudatus at the top of the cord seems the primary seat of the disease.

According to this view the process is a secondary degeneration of the posterior columns of the cord and peripheral sensory nerves.

Diller names cardinal symptoms in the order of their importance: (1) Failure of knee-jerk, (2) Romberg symptoms, (3) Argyll-Robertson pupil, (4) lightning pains, (5) loss of function of the bladder or sexual organs.

Secondary symptoms: (*a*) Paresthesia or analgesia of the legs, (*b*) locomotor ataxia, (*c*) transient ocular palsies, (*d*) paresthesia in ulnar distribution, (*e*) optic atrophy.

With the presence of two of the cardinal signs of tabes and one of the secondary signs the diagnosis may be made with certainty, and as probable with two secondary and one cardinal sign.

BLISS.

OPHTHALMOLOGY.

Strabismus and Its Treatment.

At the Fifty second Annual Meeting of the American Medical Association, held at St. Paul, Minn., strabismus and its treatment was discussed in the following order:

MEASURES OTHER THAN OPERATIVE.—By Dr. Edward Jackson, Denver, Col. The author states that the operative treatment of strabismus is less applicable than non-operative measures. In order to bring about a perfect cure, some non-operative treatment is requisite. The objects in view are:

1. To bring about normal innervation of the muscles concerned in the movements of the eyeball by removing abnormal requirements.
2. To keep the eye as far as is possible upon the best plane of visual acuity, and to equalize the efforts that are required of them.

3. To eradicate abnormal ways of using the eyes, especially when one eye is used, to the practical non-use of its fellow.

4. To develop normal binocular vision.

In the majority of cases treatment should be instituted as soon as the strabismus is first noticed. The establishment and perfection of binocular vision is the aim of the non-operative treatment, and from a practical point of view, the correction of refractive errors, stands pre-eminent in the treatment of strabismus. The occlusion bandage, constantly and correctly applied in young children, is of value. Intelligently performed skiascopy is essential. Mydriatics are of no use unless they absolutely paralyze accommodation. Of the apparatuses employed for the development of binocular vision (the primary object being to induce the patient to see with both eyes at once), Jackson prefers the fusion tubes of Priestly Smith, and especially in the form shown by him before the Section. Next to these he prefers the reflecting stereoscope as modified by Worth. Ordinary stereoscope lenses are so decentered that they practically act like prisms with bases out.

OPERATIVE MEASURES.—Dr. C. F. Clark, Columbus, Ohio. The author of this paper calls attention to and discusses the variety of opinions that exist among ophthalmologists:

1. As to the degree of deviation and the character of the cases which they consider proper subjects for operation.

2. As to the age at which an operation should be performed.

3. As to the choice between tenotomy and advancement.

4. As to the amount of deviation that may be safely corrected by tenotomy.

5. As to whether the operation should be confined to the eye which most constantly deviates or its effect distributed between the two eyes so as to preserve ocular balance.

6. As to full correction of the error in the first operation or delaying a portion of the operative procedure until the effect of the first division may be properly established.

7. As to the practicability of partial or graduated tenotomy or advancement.

8. As to the value of orthoptic exercise before and after operation.

9. As to the value of tests made with prisms and otherwise during the progress of an operation.

10. As to the importance of the subconjunctival method of Snellen and the suturing of the conjunctival wound.

11. As to the necessity of bandaging one or both eyes after an operation for tenotomy or advancement.

12. As to the relative importance of operations upon the superior and inferior recti muscles in cases of hyperphoria and hypertrophia associated with lateral deviation.

13. As to the most approved form of operation for tenotomy and advancement.

The author predicts that within a few years many of those who have heretofore depended mainly upon tenotomy for the correction of strabismus will find themselves adopting the more tedious but far more conservative operation of advancement, almost as a routine practice. The peculiar insertion of the superior and inferior recti muscles should be taken into consideration. Whether tenotomy or advancement are adopted, the operative effect must be so distributed among the various ocular muscles as to preserve the control of the eyes in all ordinary movements. The well-marked heteronymous diplopia with images widely separated, which not infrequently results after carefully performed operations for convergent strabismus and dependent upon the presence of what is sometimes called a false macula, should not disconcert the surgeon, as it rarely causes serious disturbance, although it increases the difficulty in determining the result obtained from the operation. The author is convinced that in the operative correction of squints, advancement or resection combined with a very limited tenotomy ought, as rule, be performed in place of a simple tenotomy.

ITS TREATMENT.—Dr. A. E. Davis, New York City, read this paper by invitation. After considering the different tests for strabismus he states that it is desirable that a uniform or standard set of tests be adopted for accurately measuring strabismus. He makes a plea for a better understanding, not only of the physiological action of the ocular muscles, but of physiology in general, by those treating cases of strabismus. He believes that in most cases of convergent squint the amblyopia is acquired and functional, and only in rare instances is it congenital. As soon as the strabismus is observed the non-operative treatment is capable of doing considerable good. By means of this manner of treatment, if instituted in time, forced fixation and suppression of the image in the squinting eye are prevented, fusion of the images assisted, and true binocular single vision frequently preserved.

About 30 per cent of all cases of strabismus may be cured simply by the non-operative treatment. As soon as non-operative measures cease to bring improvement operation should be undertaken; but if operation is delayed after this it becomes not only useless but harmful, increasing the amblyopia, because the habit of suppressing the image in the squinting eye persists.

He believes that after operation the stereoscope, occlusion bandages, bar reading, glasses, etc., are very useful. He recommends Panas' method of operating for strabismus as safe, quick and efficient; but it should never be performed while the patient's eyes are being influenced by a mydriatic.

THE COSMETIC AND VISUAL RESULTS.—Dr. J. M. Ray, Louisville, Ky. The author of this paper believes that glasses should be adjusted to the eyes of children affected with strabismus as early as possible, depending upon the power of the parent to control the child. The glasses should always be worn for a long enough time to ascertain their effect upon convergence before an operation is undertaken. Dr. Ray considers the use of the exclusion pad and orthoptic exercises as advisable steps, principally for the power of simultaneous action of the muscles when the child arrives at the proper age for operation. Parallelism of the visual lines does not mean single binocular vision, and the latter is not present in more than 7 per cent of cases of strabismus.

Cosmetic results can be produced and preserved when the power of fusion is absent, both in monocular squint attended by considerable amblyopia as well as alternating squint. In the latter variety, if the hypermetropia is high, the chances for the production of parallelism are better than when the hypermetropia is low. The amount of abduction present in the corresponding externus influences the effect of a tenotomy to a considerable degree. Two tenotomies on the same internus is to be considered as bad surgery on account of the resulting sinking of the caruncle and the divergence which later ensues. From a cosmetic point of view the operative correction of strabismus is not as simple as supposed, especially when one considers the noticeable exophthalmos and the both inward and outward limitations of the ocular excursions which sometimes follow. A study of 100 cases during the past four years showed that binocular vision was rarely produced. Glasses should always be tried, but stereoscopic exercises are of little value.

Examination of Muscular Insufficiency.

Alexander Duane (*New York Medical Journal*, May 25, 1901) gives the routine which he has adopted in examining the eye muscles. He says: After making a cursory inspection of the patient to detect the presence of any obvious anomaly, I direct his attention to a cardboard sheet, a foot or more square, hanging on the opposite wall of the room. In the center of this sheet is a round black spot, one inch in diameter. I cover the left eye with a screen and, first making sure that he is fixing the spot with the right eye, I pass the screen quickly from the left eye to the right. In doing so I watch for any deviation taking place in either eye, and at the same time ask the patient if he notices any movement of the spot. I then place prisms, appropriately directed—*i. e.*, base in for an outward deviation, base out for an inward deviation, base up or down for a vertical deviation before the eyes, gradually increasing their strength until there is no longer any deflection behind the screen. This neutralizing prism will indicate the amount and character of the deviation as measured by the screen test. The same prism may also abolish the apparent movement of the spot, perceived by the patient. If not, I change the prism until the movement is absolutely nil, and thus measure the amount and character of the deviation by the parallax test.

If there is any noticeable deflection behind the screen I then apply the screen test in a second way or by binocular uncovering. This well-known procedure consists in covering the left eye and then uncovering both eyes and noticing the movement that takes place. If, on thus uncovering the left eye, the right eye remains steady and the left moves into position, I know that the patient has binocular fixation and that the deflection was a heterophoria and not a squint. If, however, the right eye should move out of its position and the left eye should move into its place, I know that there is a squint and that the left is the fixing eye. If neither eye moves, I know that there is a squint and that the right is the fixing eye. By repeating this experiment with each eye alternately I can tell whether there is an habitual binocular fixation, an alternating fixation or a uniocular squint. The diagnosis between the three may be conveniently formulated as follows:

1. If in binocular uncovering but one eye move, we have heterophoria and not squint.

2. If either both eyes move or, in spite of there being an evident deviation, both eyes remain steady, there is a squint.

3. In the latter case, if, when the left eye is uncovered, the eyes behave in the same way as they do when the right eye is uncovered (both alike moving or both alike remaining steady, no matter which eye is uncovered), the squint is alternating.

4. If, when one eye (for instance, the right) is uncovered, both eyes move, and when the other eye (in this case the left) is uncovered, both eyes remain steady, the squint is uniocular (confined in this case to the left eye).

I next employ the Maddox rod in the usual way, testing first for vertical and next for lateral deviations. For this, of course, I use a light as a test object. Next I employ the phorometer (Stevens' model) and again first for vertical and then for lateral deviations. With the phorometer and Maddox test I find, like other experimenters, that I get more accurate results if, as the patient is looking through the apparatus, I cover one eye for a moment, then suddenly withdraw the cover and make the test before the patient has had a chance to fuse or separate the double images.

The phorometer being still in position, I now use it in testing at near points, the test object in this case being a fine dot on a rather large card. Any object with lines in it I regard as vitiating the accuracy of the test. Using the same test object I then make the near test with the screen and parallax just as for distance. I next ascertain the convergence near-point, using any fine object and bringing it up close to the eyes until the patient can no longer converge upon it, and then measuring or estimating the distance of the object from the root of the nose.

Then I determine the prism divergence (abduction) and the prism-convergence (adduction) in the usual way with prisms, held respectively base in and base out. In testing the prism-convergence it is a good plan to notice whether the accommodation is called into play as the patient converges. This can be ascertained if we use the ordinary trial card as a test object and observe how much the patient's vision is blurred by the progressive addition of prisms base out.

Lastly, I determine the field of binocular vision. This I do as follows: I place a red glass before the patient's right eye and, standing at a distance of four feet, carry a candle so as to make it skirt

successively all the outlying parts of the field of fixation. That is, I carry it first to the extreme right, then rather quickly back again to the middle line and on to the extreme left, then up (*i.e.*, to the up-and-left position), then back to the middle line (straight-up position) and on to the right (up and-right position), then down to the horizontal plane and then below it, so as to skirt the lower field in the same way as the upper. In doing this I note whether the patient gets diplopia in any part of the field, how great the diplopia is, and what direction it tends to increase; and at the same time I watch to see whether the excursions of the eyes appear normal in all directions, or whether either eye lags behind in its motions anywhere.

SHOEMAKER.

PEDIATRICS.

Cardiac Dilatation in Children.

Neuman *Yahrb. f. Kinderheilkunde*, September 5 1900) studied the weakness of the heart in children due to dilatation. He quotes Martins, who found 88 in 247 children having cardiac weakness without valvular lesion.

Little is found in literature on this subject, and stimulated by the observations of Martins the author decided to make a study of this subject. He reviews, in general, the physiology of the heart's action. The pulse rate is above 110 until the end of the first year; at 5 years it is below 100. After the ninth year a difference is found in the pulse-rate of boys and girls. The average in males is 82, in females 94. The gradual change in the shape of the thorax leads to variation in the relative area of contact of the heart to the thoracic wall.

In young children the heart is relatively larger than in adults. Every age has a characteristic relation of the heart to the chest; the normal hypertrophy of the heart may be excessive or insufficient. Among 70 children examined 8 were found to have dilatative cardiac weakness; the symptoms and signs by which this clinical diagnosis was made were: General weakness, breathlessness, dyspnea on exertion and nervous irritability; the apex of the heart was pushed outward, the area of cardiac dullness was enlarged and the heart sounds muffled; the pulse was frequent, small and soft. The children are thin and pale, have no appetite, restless and do not sleep; they com-

plain of headache and pain in the stomach. The cardiac impulse is strong and diffuse. A great difference in the pulse rate at rest and after exercise was noticed. He concludes :

1. The dilatative cardiac weakness is not a rare affection in childhood.

2. The characteristic symptoms are palpitation, displacement of apex-beat, enlargement of cardiac dullness and anomalies of the pulse and cardiac impulse.

3. The symptoms develop in individuals at all ages, who from the earliest childhood are very weak and have had chronic digestive disturbances.

4. Anemia favors the dilatation of the heart.

5. Overexertion and the so-called school excesses are very important in the causation.

6. The question of possible hypertrophy and abatement of the dilatation is still undecided.

Intestinal Antisepsis in Children.

Fede and de Tommasi (*Ibid.*, Bd. 2, No. 3) made clinical and experimental researches concerning the antiseptic action of the following drugs given by the mouth to children :

Salol—5 to 10 cg. at a dose.

Tincture iodi—10 to 15 drops.

Calomel—1 to 3 cg. everp two hours.

Their conclusions are :

1. It is very beneficial to use internal antiseptics in gastro-intestinal infections and intoxications. Calomel deserves the first place.

2. In the course of these diseases it is necessary to use the anti-sepsis before the toxin has invaded the whole organism. After the use of calomel it was observed that the toxin obtained from cultures of the fecal bacteria was less virulent and the conjugate sulphates in the urine were diminished.

Non-Tuberculous Acute Meningitis.

Concetti (*Ibid.*, Bd. 2, No. 3) reports the study of 90 cases of tuberculous meningitis. He finds that in the course of various acute infectious diseases acute meningitis may occur, which is characterized by an increase of fluid but no bacteria ; this form he calls toxic meningitis.

A second form the cerebro spinal fluid is increased and may be either serous or more or less purulent, but micro-organisms are present. The diplococcus lanceolatus and the meningococcus intracellularis are the most common bacteria; others may be found. The diplococcus lanceolatus induces the severest form of meningitis.

The meningococcus-meningitis is nearly always primary and offers a favorable prognosis. In these cases there is a tendency of the acute form to pass into the chronic which terminates in a fatal cachexia or permanent cerebral lesions. The infectious and toxic lesions may be found in the cerebro spinal substance as well as meninges.

Hemorrhagic Diseases in the New-Born.

A Brown (*Pediatrics*, August 15, 1901) reports two cases of hemorrhagic disease in the new-born successfully treated by the administration of gelatin by the mouth. The hemorrhagic symptoms appeared within 48 hours after birth. In the second case the temperature rose to 103°F., while the first case was afebrile.

Gelatin was soaked and made the consistency of wine jelly and one dram of this with five drops of brandy was given every hour. The effect was very perceptible, vomiting ceased and the hemorrhage decreased rapidly.

The author concludes that the gelatin treatment has in its favor that no quantity seems to disturb the infant; it is at hand in most houses and certainly meets, clinically, the indications of increased fluidity as a cause of certain cases of hemorrhage in the new-born.

Gastro-Intestinal Autointoxication Occurring with Forms of Mucous Colitis in Children.

Koplik (*Philadelphia Medical Journal*, July 27, 1901) contributes an article to the literature of mucous colitis in children. These cases occur in children from the fourth to the later years of life. Chronic disturbances of digestion has been the rule; certain articles of food disagree. They are anemic, peevish and languid; intervals of improvement and depression alternate; constipation is the one prominent symptom. At various intervals symptoms of intoxication occur; pain, vomiting and prostration are the most prominent symptoms; large quantities of mucus and mucous casts are passed when the bowels move.

The treatment consists of rest and starvation ; rectal irrigation is good ; regulate the diet ; the constipation is difficult to overcome.

Symptoms of Typhoid Fever in Infancy and Childhood.

Griffith (*Journ. Am. Med. Ass'n*, August 17, 1901) refers to recent articles on the subject of typhoid fever in infancy. The onset may be very insidious. "Walking" typhoid is exceedingly common ; the child feels weak and tired but does not care to go to bed. The mother may not notice fever for several days and only daily tests with the thermometer proves its presence. The second form of onset is characterized by its suddenness ; the symptoms are vague ; the disease is shortened and abortive attacks are common. Enlargement of the spleen is not often discoverable ; the fever runs a similar course as in adults ; the nervous symptoms predominate ; abdominal symptoms are not marked ; constipation is the rule.

Kernig's Sign.

Kernig's sign, the impossibility of extending the legs when the thighs are flexed at a right angle to the body, has been found very useful in the diagnosis of meningitis. It is, according to Netter, found very rarely in other conditions. Formerly it was believed that the sign was absent in tuberculous meningitis, but further observation has not confirmed this. Netter reports that it is found in most cases of tuberculous meningitis. Marfan failed to find it in thirteen consecutive cases, but it was markedly present in the fourteenth case of undoubted tuberculous meningitis.

Netter observed the sign in 29 of 40 cases of tuberculous meningitis, in 28 of 30 cases of simple meningitis, and in 9 of 9 cases of secondary meningitis.

Riga's Disease.

The malady of Riga, or Fede, was first described twenty years ago (*Medical Review of Reviews*, July 25, 1901) but most of the literature is recent. It was originally regarded as a neoplasm of the frenulum of the tongue, it is now known to be akin to the infectious granulomata, and hence due to a micro-organism. It appears about the age of four or five months ; enteritis and marasmus follows the local process. The following syndrome, viz., anemia, nervous disturbances and cachexia follow.

Some authorities think that there is no sufficient evidence at present to regard this as a spinal disease.

ZAHORSKY.

SURGERY.

Differential Diagnosis in Diseases of the Gall-Bladder and Ducts.

Brewer (*N. Y. Medical Record*, December 17, 1900) presents, in addition to a most interesting article, a "diagnosis chart" which must be of value as well to the medical man as the surgeon. Stone diseases are to be differentiated from those of inflammatory origin as well as those produced by tumors. In only about 4 per cent of the cases of carcinoma of the billiary passages has a diagnosis been made during life. The three chief symptoms which have to be considered in all diseases of these organs are, pain, tumor and jaundice.

Pseudo-Membranous Enteritis and Its Relation to Abdominal Surgery.

Frank A. Glasgow (*International Journal of Surgery*, January, 1901) has observed about twenty-five of these cases, and decides that they are primarily of nervous origin. The symptoms may mislead one to a diagnosis of appendicitis or other surgical disease of the abdomen. Glasgow advises operation where the symptoms of appendicitis are severe, even though the patient be known to suffer from the form of enteritis in question. By way of treatment electricity and ichthyol have been used. This paper is of value as teaching to make us more conservative in the treatment of a disease on which the profession has almost run wild.

Radical Cure of Inguinal and Femoral Hernia; Report of 845 Cases.

William B. Coley (*Annals of Surgery*, July, 1900) combines much of statistical interest in this comparatively short article. The indications for operation at various ages are sharply and admirably drawn. The low mortality which has attended the author's work is attested by the fact that he had but one death among more than five hundred children. His method for the past ten years has been that of Bassini, with

the modification that kangaroo tendon takes the place of silk sutures. Formerly four per cent of his cases suppurated, but in his last two hundred cases only one became infected, the decided improvement being due to the use of rubber gloves. The author gives a fine detailed description of the various anatomical forms of hernia, and states that one hundred and fifty-five cases in women have been attended by a single relapse. He has had further but one relapse in fifty-four cases of femoral hernia, his technique here being much more simple than that of Bassini. Coley has seen but six recurrences in seven hundred and seventy-six Bassini operations in which kangaroo tendon was used; while in all of his eight hundred and forty-five cases there but two deaths. This is a truly remarkable record and the magnitude of the work performed seems almost incredible, the more so when we consider that it was done by one man, in a period of ten years.

The Cause of Diffuse Peritonitis Complicating Appendicitis, and Its Prevention.

Ochsner (*Journal of the American Medical Association*, June 22, 1901) contributes a noteworthy essay on the pathology and therapy of this most important subject. It is to the median side of the appendiceal region that we have to look for dissemination of the inflammation. The omentum is all sufficient to limit the process if peristalsis be kept down; a matter which can be accomplished if food and cathartics are not given. The author further aids Nature by gastric lavage, as long as food is in the gastro-intestinal apparatus, as evinced by vomiting, gas formation and pain. He has operated on five hundred and sixty-five cases of all kinds, with a mortality of but 3.5 per cent. Now his rule is not to operate in any acute attack unless it be within the first thirty-six hours. Palliative treatment is to be used until the acute symptoms have subsided, when the operation becomes practically free from danger.

BARTLETT.

NOTES AND ITEMS.

A Refrigerator Hospital for Hot Weather.—In Kansas City the suggestion has been made to build a hospital near an ice plant and cooled air from that source be pumped into the hospital through pipes. Such a plan would be invaluable during the extremely hot weather of the summer season not only in cases of thermic fever but for all patients alike. By this means the wards and rooms of a hospital could be kept at the same temperature day and night. Such a plan, it is said, is being seriously considered in that city.

The Cause of Death of Napoleon I.—Dr. Baudouin, a French physician, according to the *N. Y. Medical Record*, recently published the results of his investigations regarding the cause of death of Napoleon Bonaparte and concludes that instead of having died from cancer the great Emperor really suffered from an ulcer of the stomach which caused death by perforation. Hematemesis was a symptom previous to death, and the autopsy showed no hypertrophy of the liver, nor any sign of cancer, but the presence of gastric ulcer which had perforated near the pylorus.

Diphtheria Infection from the Use of Toys.—Two children in Marion, Indiana, recently contracted diphtheria from toys which had belonged to a child that fifteen years previously had died from that disease. They had discovered the toys in an old trunk where they had remained since the death of their former owner. No other source of infection could be accounted for, and the diphtheria bacilli undoubtedly retained their virulence and vitality unimpaired for that interval of time.

The Vermiform Appendix as a Secretory Organ.—Dr. E. P. Hershey, of Denver, at the recent meeting of the Rocky Mountain Medical Association in that city, advanced the theory that the vermiform appendix is a secretory organ having as its function that of providing a secretion to act as a lubricant for the contents of the cecum and the colon.

Hospital at the Confederate Home of Missouri. — A new hospital which is being built at the Confederate Home of Missouri at Higginsville, is nearing completion and is now ready for the roof. It is said to be greatly needed and will be completely finished by the first of November.

Women Admitted as Medical Students at Rush Medical College.—Rush Medical College in Chicago having affiliated with and become a department of Chicago University becomes co educational and admits to its classes women medical students. At present, however, women will be admitted on an equal footing with men only to the first and second classes. When the contemplated new building have been completed giving greater facilities women will be admitted also to the last two years of the course.

Educating the Masses in Infant Hygiene. — According to the *Journal of the American Medical Association*, of August 17, the Paris, France, Prefect of Police has had the walls of vacant houses, signboards, etc., placarded with a circular calling attention to measures of infant hygiene, during the heated term, warning not to wean infants nor feed them from bottles with tubes, to boil all the bottles, etc., and protect them from dust, and to refrain from giving fruit to children under three years, and over this age only in moderate amounts when cooked and, finally, at the first symptoms of disturbance on the part of the child to summons a physician.

Assistant Physicians Appointed at the Nevada Asylum.—

Dr. J. W. Angle, of Smithton, Pettit County, and Dr. L. M. Thompson, of Atlanta, Macon County, have been appointed by the Board to the positions of assistant physicians at the State Insane Asylum at Nevada. Their appointments are for a term of service of two years, beginning October 1, 1901.

King Edward Has a Sore Throat.—The daily press is authority for the statement that King Edward of England has some disease of the throat which requires constant watching and treatment, and that he is apprehensive that it may prove to be malignant as happened in the case of one of his sisters. His physicians it appears are of the opinion that it is not malignant and while their course of treatment is not outlined, a close guess might be hazarded that a liberal dosage of kalum iodidum is being used. It is probably rheumatic.

The Nudity Cure.—Germany and Austria are prolific in originating so-called "cures." The latest is the nudity cure, which had its origin in a little village in Austria near the Adriatic Sea. According to the *Medical Age* the debilitated, neurasthenics, the tired, etc., can go there and, in the costume of Adam, expose their individuals to the air, the sun's rays or the rain. Thickets are carefully arranged so as to cut off all view of the patients; a hat and short trunks only are allowed; the sexes are separated. Baths, massage, gymnastics and games are indulged in and a strict vegetarian diet completes the treatment. From the Father Kneippe to the nudity, from silliness to amentia in the "altogether" are senseless fads. What will be next?

No Mosquitos, no Malaria.—The United States Government is taking steps to prevent the transmission of diseases by mosquitos, flies, and like insects in the Marine Hospital at Baltimore. All the windows of the hospital are covered with mosquito netting and particular attention is paid to the kitchen, dining room and to the protection of food. Each bed occupied by a patient has a covering of mosquito netting, and all insects that gain access to the building are destroyed by sulphur fumigation, formaldehyde being unreliable for that purpose. Kerosene is placed on neighboring pools of water from time to time for the purpose of exterminating the larvæ of the mosquito.

Another Trust War.—The town of Ludington, Mich., is in the midst of a war of small proportions in which the medical profession is involved. The local physicians recently rearranged the schedule of their visit fees, which apparently did not meet with the approval of the denizens of that town, who, in retaliation, formed an organization of about two hundred families and employed a recent medical graduate to attend them at a salary of \$1,800 a year. The salary is raised by monthly assessments, and the doctor is required to respond to all the calls from members of the organization. If the doctor is called needlessly a fine is charged against the sender. It is not stated whether the physicians there put their prices up or down, but judging from the action of the laity, they were probably put up. The young graduate will have an active career in that field and will accumulate experience, some medical and some otherwise.

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ORIGINAL CONTRIBUTIONS.

Municipal Control of the Dependent Classes.

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IN treating the subject of this paper it seems fitting to consider it from two wholly different points of view: On the one hand we should carefully scrutinize the actual conditions now existing and, if possible, determine the principal causes which produce results so baneful to the individual and society; on the other hand we should seek to devise reforms that reach and eradicate the cause—reforms which, if impractical to-day, nevertheless may serve the useful purpose of forming an ideal working hypothesis for the reformation of the race, and incidentally the municipality.

We are told that municipal corporations are organized only for purposes of government; that their laws are local and devised with the direct purpose of governing the commonplace affairs of the people in everyday life and to protect their several rights in relation to each other.

I shall assume at the outset that properly the municipal government should maintain a paternal relation to the governed, that its fundamental laws should be to establish an equitable adjustment of all matters pertaining to the civil and political rights of its citizens, *i. e.*, the *absolute* civil rights

which insure to the individual personal security, personal liberty and the right to acquire private property, such as does not menace the welfare or rights of others; and the *relative civil* rights of the public which operate, first to insure the people the protection of the government, and, secondly, to secure to the government the *right of obedience* from the people; in addition to these we have the *relative civil private rights* which insure a proper observance of the natural relations and obligations between employer and employed, guardian and ward, husband and wife, parent and child; and the *political right of all* to establish a government, and also the *right of each*, by voting, to share in the government.

In law, a right is defined as a just claim; it naturally follows, therefore, that all citizens, both *male* and *female*, should have a right to their lives and freedom, provided they do not trespass upon the rights of others.

Having assumed the above premises to express the correct relation between the municipality and the citizen possessing civil rights, it is perfectly clear that as rights are common to all persons in society, society must have its rights also, and those who infringe them should be restrained from doing further injury to society by the forfeiture of their own rights in a just proportion to the offence or crime.

This brings us to the consideration of the subject of this paper—The Municipal Control of the Dependent Classes. It will be necessary to determine who constitute the dependent classes, but as the space allotted me will not admit of a full analysis as to who are legally the dependent classes, I shall, according to the popular notion, arbitrarily fix upon the blind, the insane, the idiotic, the old and decrepit, the orphaned children, the poor and unemployed, the sick poor, the irresponsible and the criminal, as those constituting the dependent classes.

We find that one of the most serious problems the municipal government has to solve is how best to limit crime. Hence criminology, or the science relating to crime, becomes a very important study.

Crime is an offence against society because it subverts the body of laws which the people have established for the protection of the life and property of the individual, violates some public or private right and disturbs the essential tranquillity of the public. Crime should not be confounded with vice.

Crime is directed against society, whereas vice, though it naturally leads to crime, is indirectly an offence against society.

A criminal is a degenerate person, an individual whose abnormal propensities make it impossible for him to live in accordance with the social standard fixed and recognized as binding by the community or country in which he lives. The intrinsic defect of his mental or moral development prevents him from comprehending his own self-interest and his individual responsibility to society. Hence it follows that he lacks a motive for voluntarily resisting or controlling the vicious or criminal impulses which the expediency of the moment may prompt him to exercise, and this absence of self-restraint leads him to the commission of such acts as are designated as vicious or criminal. Crime is, after all, a relative term; for example, in this civilization, in times of peace, it is murder to kill our fellow-men; in times of war, it is patriotic and is, therefore, laudable.

For convenience, criminals may be classified first, as accidental criminals, or criminals by passion; second, as instinctive or born criminals; third, as insane; fourth, as occasional; fifth, as habitual, and last, as professional criminals.

The criminal by passion is one who, in the heat of passion, openly commits a crime, but never for the purpose of furthering any criminal design. He generally suffers immediate and intense remorse for the crime. These criminals, as a rule, are of good character and possess none of the abnormalities which characterize the criminal type.

The instinctive, or born criminal, is one who inherits or, during infancy or in early childhood, acquires through disease or accident the mental, moral and physical stigmata of degeneration. He reverts to the savage type and is naturally idle, crafty, sensual and brutal. He suffers little, if any, through imprisonment and is what is popularly known as the typical "jail-bird."

The insane criminals are those who, owing to inherited or acquired unsoundness of mind and morals, commit such acts as are offences against society and the law. In this category we find many intermediate types, representing conditions of violent mania, of partial insanity, of moral insanity, or reasoning insanity—characterized by partial or complete absence of moral sense, epilepsy, and sexual psychopathics; indeed, many

of the instinctive criminals should also be classed under this type.

The occasional criminal, one class of which is known as the criminal of passion, does not naturally take to crime, but owing to the temptation of his personal necessities, or his youth, may lapse into crime; although when these necessities or temptations no longer exist, he readily gives up his criminal ways and continues to live a reputable life. In short, the occasional criminal is one who is not criminal by instinct but who lacks the force of character necessary to resist such external causes as tend to incite him to acts of crime.

The habitual criminal is usually one who began his viciousness with petty vices and crimes which, by frequent repetitions, become crystalized into a fixed habit with a resultant moral and mental degeneracy. Very often a prolonged familiarity with vice and crime leads up to this condition; or an accidental criminal through being sentenced to a term in prison becomes an habitual one.

The professional criminal may be called the rogue aristocrat. He usually represents a higher order of intelligence than the average criminal—in fact, he must be above the ordinary in this respect if he is to be successful.

The statistics of crime fix the percentage of the accidental and occasional criminals, and the criminals by passion at between 40 and 50 per cent, and the instinctive, habitual and professional at between 40 and 50 per cent.

The so-called "criminal age" is between 24 and 35 years. Below puberty it is estimated that the relative criminality of the two sexes show a preponderance of crime among the girls, but at puberty the ratio is about equal; while in the female, during the child-bearing period it drops very low, again to reach the level of that of the male and to increase in a much greater relative proportion up to the age of 65 or 70 years when it again becomes equalized. Among the male criminals the unmarried are in a very large majority, and the maximum criminal age is about 25 years; whereas among women maternity is undoubtedly a strong factor in reducing crime, inasmuch as statistics show that the age of maximum criminality is at 35 years, or past the child-bearing period.

Many students of criminology—and I am one of them—regard criminals as degenerates, individuals who have deviated from the normal to the morbid type. Careful observations by

reputable criminologists, scientists and others have produced certain definite conclusions concerning the abnormal physical, mental and moral development of the criminal. To illustrate, the criminal's head is usually an exaggeration of his race-type, either smaller or larger in size. His skull is strikingly lacking in symmetrical development and often combines several abnormalities, such as are rarely, if ever, found in normal persons. Thieves usually have microcephalic, or small skulls, and murderers macrocephalic, or large skulls. Scientists have come to regard the weight of the brain as of little consequence and to attach great importance to its shape and development, and to the relations of its convolutions. The normal evolutionary tendency is for the symmetrical brain of savages to take on the higher or asymmetrical form, but the brain of the criminal is likely to retain its juvenile type or revert more nearly to the undeveloped savage type.

His face, too, exaggerates the racial characteristics. There is a squareness and massiveness in the excessively developed lower jaw to be found in violent criminals, whereas among the non-criminal insane this feature tends to be smaller than normal. The sexual psychopaths are often characterized by the excessive development of the cheek bone. Among the idiotic and the criminal, anomalies of the dental and palatal arches are most frequent.

The ear is also a very good index of degeneracy and crime. Ears that are long or very large transversely are indicative of idleness, vanity and foolishness, while prominent and excessively large ears are characteristic of the criminal; whereas, the idiotic and feeble-minded frequently have congenital deformities of the ear. The Darwinian tubercle, a pointed projection on the outer border of the ear, is very frequently found among the insane and the criminal.

The pallor of the skin so frequently remarked in criminals is probably due to long imprisonment or to their close confinement at home during daylight hours, while in hiding. Its wrinkled appearance, too, even in the quite young, is very noticeable.

Sexual psychopaths alone, of all the criminals, seem to possess a full beard, whereas in *all* criminals the hair of the head and even on the body is usually abundant, while the insane are often bald.

The muscular system of the criminal is usually defective;

the deep and the superficial reflexes exaggerated or lost; the arms extraordinarily long, the shoulders stooping, the foot tends to revert to the savage type, *i. e.*, to become flat; the chest frequently pigeon-shaped and poorly developed, the heart and blood-vessels very often diseased, and the metabolism, or changes in the nutrition and excretions of the body, faulty.

In criminals sensibility to pain is very obtuse or deficient; this is especially true of the instinctive criminal, of the prostitute, who approximates very closely to the instinctive criminal, and also to the insane. Grave surgical operations have been performed on these people without causing pain.

Of the five senses, only the sight is usually good, the others being generally considerable less developed in the criminal than in the normal person, or are sometimes even absent.

The instinctive criminal's moral insensibility seems to be in fairly constant proportion to his physical insensibility. He eats heartily, sleeps well, and almost never seems to know remorse. This physical and moral insensibility accounts for the cruelty which the instinctive criminal practices from his infancy.

The criminal's will-power is very unstable and he is likely to be very emotional. He is proverbially idle and incapable of sustained effort at any regular occupation. At intervals he will work with the greatest energy or debauch with an equally violent activity, as though, during his period of inertia, he had generated a surplus force of energy subject to occasional explosions in the form of physical exertion or debauchery. At these times there seems to be an imperative desire for intense excitement. To gratify this craving he instinctively resorts to alcohol, gambling and sexual excitement. Thus the brothel and the saloon are his natural resources for the gratification of these instincts. Fortunately, however, all criminals are not given over to the excessive use of alcohol.

The intelligence of criminals is variable. Burglars, embezzlers, and pickpockets do not seem to be of defective intelligence, whereas those convicted of theft, assault, highway robbery, sexual offenses, vagabondage, murder and incendiarism, in point of defective intelligence, rank lowest, in the order named.

Although there are very striking exceptions to this rule,

the average criminal is stupid, deceitful, exceedingly imprudent and untruthful.

The excessive vanity of criminals is most significant, inasmuch as it explains the morbid desire of some weak-minded persons to excite the comment of the public, and to show that the predominant motive among criminals for committing crimes of magnitude is the desire to become known among their fellows in criminal society.

Notwithstanding that criminals have no moral sensibility, they are, nevertheless, very likely to be sentimental. For example, they may commit a cold-blooded murder and yet be very tender with some pet animal or with some sick associate, and the more intelligent of them frequently have quite strong family affection.

It is a curious fact that an atheist is of the rarest occurrence among criminals possessed of any degree of intelligence. Criminals are either sentimentally or superstitiously religious, or they are indifferent or stupidly apathetic on this subject. Most of them, however, especially Roman Catholics, are sincerely religious, thereby, under the promises and consolation of their religion, easily dropping the burden of their individual responsibility.

As a philosopher the criminal is something of a fatalist. He usually regards himself as the victim of fate and is, therefore, free from remorse. He considers society as his natural enemy and prey, and is convinced that all men are dishonest, if they could only be detected in their dishonesty. He regards his conviction and imprisonment as incredible, and if his sentence is not for too long a term he is contented, because he knows that he will be among congenial associates from whom he will learn new and valuable tricks in his profession; moreover, while there he will, without the necessity of labor, be fed, clothed and warmed at the public expense. It has been well said that "the criminal who has once tasted prison life is sure to return to it, and thieves are rarely, if ever, reformed." The question every judge, lawyer and physician should seek to determine in any criminal case is whether the criminal is a degenerate of the hereditary or acquired type, and if his criminality is of a kind likely to be corrected by a judicious course of treatment; if not, what course is best to pursue in his case, for the protection of society and the elimination of crime. Before reaching these conclusions they should carefully sum

up the physical abnormalities of the criminal in any individual case, taking into consideration all the personal characteristics, even to the tattooing on the body; the abnormalities of intelligence, sensibility and moral sense; the personal characteristics such as sex, age, race, social condition and environment, profession and education; the physical conditions, such as climate, the nature of the soil, the season, the temperature conditions, the meteoric conditions and the wind velocities.

One of the prolific causes for the overproduction of the dependent classes is ignorance—ignorance on the part of the parents, educators, law-makers, public officials and the individual.

Ignorance in the parents results in the reckless transmission of a bad heredity to their offspring and the failure to mitigate by a proper environment the evils of such an heredity; in educators, in the failure to recognize the physical and moral necessity of a proper training which shall tend to develop the child along normal lines; in the law-makers, in the failure to enact such laws as shall protect the public and the individual against the indiscriminate propagation of a criminal, dependent and hapless race, which can only add to the needless sufferings of the world; in the public officials, in the failure to enforce such laws as already exist for the protection of society; in the individual, in his failure to understand his personal responsibility and the necessity of his living in harmony with the laws of Nature, evolution and society.

Heredity is another factor of immeasurable importance in the study of our subject—hence, a brief, general survey of this topic will be necessary. Heredity is a term used to express such characteristics as are transmitted from parent to offspring. It is universal in its manifestations and all living things show its primitive influence. The principle factors that should be taken into consideration in the study of this subject are: First, general traits, or those evolved from remote ancestry and such etiological factors as environment, climate, soil, intermarriage and the anatomical, physiological and psychological abnormalities of the progenitors and, secondly, recently-acquired traits.

Heredity is divided into two great classes of phenomena—general heredity repetitions and individual hereditary variations; and for convenience in study, these may be divided into several sub-classes.

General hereditary repetitions are characterized by two great sub-classes of phenomena that are transmitted to the offspring. In the one sub-class we have repetitions of the physical, mental or moral peculiarities of the immediate ancestors, especially those of the parents. The transmission of prenatal peculiarities is determined largely by the manner in which they have been acquired. Those that have evolved naturally and have been transmitted through many antedecendent generations, tend to reappear with increasing force each succeeding generation. But artificial modifications, such as mutilation and acquired traits, are more rarely transmitted.

To the other sub-class belongs atavism, a term used to denote reversion to the lower type or to the morbid traits of remote ancestors but not immediate parents. The most striking illustration of this form of heredity is found in the offspring due to the intercrossing of the colored race with the white—which shows that the hybrid offspring are almost identical in respect to color, features and other characteristics, with their colored progenitors. According to Darwin, the more extreme the cross the greater will be the reversion to the type of the progenitors with a reappearance of lost, but probably latent characteristics, and a disappearance of recently-acquired traits. This same reversion to the lower type usually results from unsuitable marriages.

Intermarriage up to a certain point has a tendency to improve the type and to exaggerate certain characteristics common to both parents, be these normal or abnormal; so it is with intercrossing between two races.

In making a study of individual hereditary variations it is difficult to determine the line of demarcation between direct heredity and prenatal influences.

Individual hereditary variations are best studied in two sub-classes: Acquired traits, or direct inheritance of prenatal influences, or direct causes for individual variations.

Darwin has clearly shown that that the tendency to vary is itself hereditary, and that the greater the variations in the ancestors the more likely are they to occur in the progeny. So it is with individuals who have evolved new characteristics which greatly vary from those of their parents in any special direction. These individuals will tend to produce offspring varying more in the direction of the newly-acquired traits than in any other.

Recently-acquired traits are undoubtedly transmissible, though in a lower degree than those that have been transmitted through generations.

Prenatal influences are factors which transmit hereditary characteristics and fix upon the offspring his definite individuality. In other words, hereditary characteristics tend to be transmitted, acquired traits tend to modify them, while prenatal influences further modify and make permanent the character of the offspring. If these influences are weak, or neutral, the less do they interfere with the transmission of general hereditary tendencies; if strong, the more do they accentuate the recent or remote characteristics of the progenitors.

Prenatal influences may be justly termed the early and most important education of the individual. Its power depends on two conditions—the physical, mental and moral state of the mother at the time of conception, and the environment of the mother during the whole period of gestation. This is especially important in the early months of pregnancy, because then the brain-cells of the new being are in a plastic state and will react to the formative influences which the mother exerts upon them. In organizing the psychic centers of the offspring, like tends to produce like, as dishonesty to produce dishonesty; hatred, hatred; violence, violence. On the other hand, harmony to produce harmony; love, love, and strength, strength.

Among the factors which play an important part in prenatal influences for the production of the dependent classes, are found—moral perversion, abnormal transformations due to the inroads of disease, such as abnormal physical development, insanity, neurasthenia, epilepsy, sexual perversion, syphilis, gonorrhea, tuberculosis, heart disease and certain drug habits, such as alcoholism, tobaccoism and morphinism, age of father and too frequent child-bearing in women.

Inasmuch as the dependent and the criminal classes are not recruited entirely from criminal parentage, it behooves us to ascertain the debasing influences that are so demoralizing to society not criminal by heredity. We find them to be as follows: Ignorance heads the list and because of it everywhere the unfit are allowed to marry and beget a vicious and degenerate progeny. It creates and makes permanent a bad home environment with its manifold evil results to the individual and to society; and it prevents the voluntary effort to ac-

quire a true conception of life, its responsibilities and the unavoidable penalties fixed by Nature against wrong living. The lack of knowledge causes moral corruption to shake the very foundations of home and society.

Bad school associations exert a very deleterious influence upon the growing child; so does bad literature.

Unhygienic occupations, such as work in dark, damp and ill-ventilated places; in tobacco factories, in breweries, in match factories, in mines, in mills; in short, in any place where darkness, dampness, dirt or filth prevail; overwork and long hours with no happy, innocent recreation or study—all these are very injurious to a normal life.

Unhygienic living, which includes improper ventilation, with too hot or cold rooms, bad or insufficient food, overwork, dissipation, uncleanly habits of thought and life, filthy surroundings, unhygienic public conditions—physical and moral, which include a pernicious sewerage system, filthy and dark streets and alleys, improper inspection of food, milk and water supplies, lack of proper supervision of tenement houses and back yards, lack of public baths and wholesome amusement and exercise; saloons, gambling places with their games of chance—including slot machines and the like, low theaters, brothels, congested districts in cities, unrestricted immigration, idleness, unjust prosecutions and inadequate punishment of young criminals, political corruption and social corruption—all are factors of the greatest importance in this reckoning. The indiscriminate giving of charity, too, *i. e.*, the giving of something for nothing, is a very injurious method of dealing with the poor. The inferiority of woman, so often asserted, exerts a debasing influence on the minds and morals of society.

Having briefly considered some of the principal factors which produce our dependent classes, we will now see how the public takes care of them. Go where you will, every city directory will furnish you a list of charitable organizations and institutions for the sole purpose of caring for the dependent classes. We find that these charities provide hospitals for the sick, almshouses for the poor, relief stations for the distressed; police stations, jails and prisons for the criminals, asylums for the irresponsible, the insane, the blind, the deaf, the dumb, the orphan and the homeless. Private charities greatly outnumber the public charities and will be considered, in this

discussion, as municipal charities, because they effect the well-fare of the municipality.

These municipal charities give partial or total care of those who apply to them for aid. Many times aid is granted without the slightest effort to ascertain if the applicant is really needy and deserving of charity, nor is any equivalent required for value received. The effect of such a system is obvious—with the indiscriminate giving of charity certain definite evils follow. Indiscriminate charity fosters idleness, pauperization and crime because it gives something for nothing, thereby lessening the self-respect of the individual, and teaching him that he may gain his living comfortably without the necessity of labor. The steps are then easy which lead to dependence and crime.

Except in unusually hard times, as in the panic of 1893-94, very little attention is given to the poor who are out of work. Then at such time the public conscience or self-interest is aroused and a brief hysterical effort is made to provide work for the needy. As soon as the rigors of the winter are past the public lapses into its usual condition of independence and the poor are left to their own resources—the best school for the development of vice and crime.

Thus, having become criminal, without money to defend themselves, they too frequently become the victims of unjust prosecutions, and are sentenced to our universities of crime—the jails, prisons and penitentiaries, where they must mingle with the old and hardened criminals. Whether they are committed unjustly or not, they are more likely to come out well-schooled in criminal practices and, more than that, having no money, no other course than vice, crime or starvation is open for them to pursue, for society is against them. Again, the present system of punishment for crime is inadequate because it fosters the evil and does not remove the same.

To be sure, there are advantages in the present system of caring for the dependent classes in institutions, they are as follows: Institutional care is best because it removes and isolates the dependent individual from his unhygienic and vicious environments and prevents the criminal, during the period of his detention, from the possibility of continuing his criminal acts against society; furthermore, care for a maximum number of people at a minimum expense to the public—all of which are features to be commended in proper cases.

The defects of the present system of caring for the dependent classes are: Phenomenal extravagance incident to so many separate managements, want of organization in the efforts made to remove the cause of the dependent classes, indiscriminate alms-giving without requiring a fair equivalent from those capable of work, a proper supervision and employment of the idle, the poor and the thriftless, the failure to prevent the possibility of the "unfit" propagating their kind, the lack of a proper administration of justice with a suitable remuneration to the criminal for the work performed during the period of his sentence, lack of a proper supervision and aid extended to the criminal when he is again set free, lack of a proper municipal employment bureau where all the needy may apply for work without the danger of being robbed by the employment agent, and last, but not least, lack of a proper medium to secure temporary aid by worthy people.

If our present municipal system is so defective all will agree that radical reforms are needed. To bring these about will require long, intelligent and persistent effort on the part of society. The public must be made to realize that the rights of the individual depend upon the integrity of the government—both local and national; that the individual welfare depends on the general welfare, and that one class can not be made to suffer without a certain reaction against the welfare of every other class. Hence, no class should be granted privileges that deprive any other class of their *civil rights*—either wholly or in part.

We find that the *relative civil rights* insure to the people the protection of the government; hence, the people have a right to demand from the government that the unnecessary propagation of the hereditary diseased criminal, criminal and dependent classes be stopped, and that society be relieved thereby from the excessive burden of increased taxation incident to the cost of the maintenance and care of these.

We know that gigantic combinations of capital and private ownership of public utilities in the hands of the few are dangerous to the welfare of all, aye, even to the capitalist themselves; hence, the government should protect all by finding some legitimate means of limiting individual and corporate wealth and of directing the excess beyond that limit into the public treasury for the benefit of all. Such legislation would only be just, inasmuch as that the wealth has been accumu-

lated by the united efforts of the many, but through the force of superior power has been made to revert to the pocketbooks of the few while the many are left to suffer for even the necessities of life, as well as to pay an excessive proportional share of the taxation on the very wealth they have helped to earn, but have not shared.

The municipality should own and operate its own public utilities—such as its gas and electric light plants, its street railways, its docks, its telephones, its dirt and garbage destruction, its water plant, its bath and wash-houses, and the like. In this way the public could be better served at a very much reduced cost. The income from these sources alone would, in most cities, exempt their citizens from taxation and make it possible to do without the present important and large revenues derived from the saloon, the gambling-den and the brothel—that unholy trinity which is the fountain source of most of the disease, misery and crime from which the civilized communities suffer.

There should be direct local and national legislation by *all* the citizens in the community. Then if any voter fails to vote, it should be considered a misdemeanor with a fixed penalty, and his name should be stricken from the check-book until he can give a satisfactory reason for his failure.

There should, also, be reform in our present system of taxation. This revision could well follow the system of the Swiss Republic—a system based on the financial status of the individual, that is, lightly on the very poor, and with a gradually ascending scale, according to the wealth of the person taxed. Our system of taxation, as practiced, may be compared to two men, one weak and sick and the other strong and well, who must travel to the summit of a long, steep hill, the sick man being compelled by the strong one to carry the principal share of the burden.

Another important feature of reform would be the establishment of a complete federation of all the charities in each municipality and this, in turn, to be federated with all the other charities of the State. Such an organization should be so perfect in its details that a complete record of every person receiving aid from any one of these sources should be on file in the central office of the municipal federation of any given place. Thus, at a few minutes' notice it could be ascertained

whether or not the applicant for charity is a "professional dead-beat."

There should be a careful, systematic specialization and classification for the administration of charity or limited aid.

All applications for aid should be made through the central office and from there referred to the proper department in the classified list.

Provision should be made to give emergency aid to any new applicant in immediate need of assistance, but whose name is not found on the records. In all doubtful cases a thorough investigation should be made before relief is given, and in every case immediate steps should be taken to ascertain if the applicant be properly entitled to such aid, if found to be unworthy, *i. e.*, financially able to maintain himself there at his own cost, or physically and mentally able to support himself, then he should be required to do so.

The management of such an institution as a municipal federation of charities should be non-partizan and only such officers as devote their whole time to the work should receive compensation for their services. The different departments should have advisory boards composed of the best men and women to be obtained, men and women who have a broad grasp of affairs and who know more than the average person about the work of their special department, men and women, in a word, who have been successful in their own businesses.

With such a system to provide care for the dependent classes relief would be immediate and effective, nor would there be so many instances of undeserving persons receiving aid from several charities simultaneously.

With such a system there should be a municipal regulation making it a misdemeanor, with a fixed penalty, for any person to give charity outside of these regular channels.

All institutions having women incarcerated therein should have women officers to take charge of them.

In every city there should be a municipal employment bureau where every person drawing a salary should be required to register. A strict record should be kept of each individual enrolled—the salary earned, the moral, physical and mental ability, together with the business capacity and integrity of the person as shown by his success and good-standing with his fellow-workmen and employers. These records should be opened at all times to inspection by the officers of the law,

and of the municipal federation of charity. Such a bureau would be a great source of protection to the poor who are constantly being preyed upon by the sharks known as the managers of the private employment offices. Perhaps, there is no business more infamous than the average employment office of any great city. Such an office manager will keep the the applicant "on the list" until his last penny is gone, and then either send him away without the promised work, knowing that without money the unfortunate man can obtain no redress, or provide him with work under the additional extortion of a certain per cent from the first week's or month's salary. If the applicant is a woman, especially if young, she is, when her last money is gone, many times forced to enter some brothel. A large number of the courtesans are secured this way. To defray the expense of management of such a bureau a small annual tax could be levied on each salaried person, or a fee collected from all persons receiving help or employment from this source.

There should be a municipal loan broker's office for the purpose of giving aid to those who are temporarily in extreme need of money. Such an office, while a source of considerable income to the city, would not have the vicious defects of the private loan broker's methods of business, and a person securing a loan on valuables might stand some chance of a final redemption of them.

There should be a relief fund established by which a small temporary loan could be made to any person out of employment and who has a good business record, the payment being secured by appropriating a certain amount out of his weekly salary when employment has been secured.

No ablebodied person, capable of earning an honest living, should be given charity, if it can be shown that work has been offered him and refused. If it is a question of work or starve, you may be very certain that he will not starve.

Such employment offices would serve as an impetus for the employe's to keep a good business record, and would be a valuable guide in determining who are the deserving poor.

There should be appointed public guardians, officers whose special duties would be to look after the expenditures and earnings of the thriftless and the witless who are physically able to earn their own living but who, owing to these de-

fects, would become objects of charity if left to their own resources.

Police matrons should be in charge of all women and children under arrest and waiting for trial. They should also be stationed at all passenger depots for the protection of the travelers as well as for the protection of such young girls as would thoughtlessly enter into a flirtation with strangers to their own undoing.

Because of the very injurious effect of ground air, which will pass through a ten-foot wall, an ordinance should be passed absolutely prohibiting people from working or living in basements. Of course, this would not mean that an engineer could not go down to attend to a furnace or engine, a plumber to look after the plumbing, and the like.

Another provision should be made by State legislation and municipal ordinances declaring it a criminal offence for an employer to pay any person employed by him a sum less than the lowest estimate of a living wage in that community. Our system of education should undergo a very extensive reform. Inasmuch as educational advantages are non-essential, though very desirable additions to the life-history of a human being; whereas the sex relations, births, life and death, together with the necessity of food, drink, raiment and shelter are the essential and unavoidable conditions to be met in the possibilities of every human life, it would seem to be the natural and logical course to teach every child, boy and girl, in the primary and grammar schools the fundamental principles governing these matters.

They should be carefully and wisely instructed concerning their responsibilities as individuals and as future parents; they should be instructed in public and private hygiene, in domestic science, including as much of physics, elementary chemistry, botany and the preparation of foods, dietetics and home nursing, all of which are of the utmost practical importance to every human life. These studies, together with reading, writing, arithmetic, grammar and geography are sufficient to enable the average human being to get on very comfortably; hence, any instructions in any other branches is a superfluity that had better be dispensed with, should lack of time crowd these branches out of the public school curriculum.

Do not misunderstand me in this. I believe that if a little education is good, profound education is even better when it

can be utilized for the pleasure or profit of the individual and society. But as all can not have the capacity or the opportunity to acquire a fine education—as each and every one has certain common necessities incident to life itself, all should receive school instruction along these lines which pertain to the unavoidable and necessary conditions of life. This is one of the *absolute civil rights* that ever child has a right to demand. As the majority of children do not go beyond the grammar school these branches should be put in the primary and grammar departments.

Tenement and lodging house supervision should insist that all such places meet the following requirements: Every room must be well lighted by day through windows which open out of doors and admit the sun-light; that there shall be no dark halls or alleys and that these places, together with the yards, be kept clean; that the plumbing be kept hygienic; that there be a proper supply of hydrant water on every floor; that there be good bath-rooms and bathing facilities; that the heating facilities are in good repair and proper and, finally, that they shall not be overcrowded—that is, every individual should be allowed 1200 cubic feet of space for each bed and 100 superficial square feet of floor space.

The municipality should see to it that every street and alley is well lighted. Light is cheaper than crime with all the expenses incident thereto. It is a well-known fact that light streets greatly reduce the ratio of crime.

The streets and alleys should be kept clean for the moral effect, but more especially for the sake of health. Dirty streets are a prolific source of disease. In the summer time they should be kept well sprinkled so that the dust can not be blown upon the air.

Public baths and wash-houses should be provided in abundance, for cleanliness and morality are, in most instances, closely associated. The criminal is usually filthy in his personal habits. In the X Century, under the reign of the great Khalif, Abder-Rhaman, the Moor, Cordova, though not a large city, was the most magnificent capital in all Europe. Besides its other magnificent public buildings there were *nine hundred* public baths. What modern city can equal that?

There should be more stringent marriage laws and these should be rigidly enforced. Every person applying for a marriage license should be required to deposit certificates of

health from some reputable physician. If it be found that either one of the contracting parties is suffering from any trouble that would be likely to effect the offspring injuriously, the person so afflicted should be required to submit to assexualization before the marriage is performed. If the trouble be a contagious disease, such as syphilis, then both should be required to undergo that operation before the marriage be permitted.

Our penal system should undergo the most radical reforms. The young offender should not be allowed to mix with the habitual criminals, and every effort should be made to reclaim them. Those possessed of a fairly good heredity and physical development should receive special care, while all should be taught some useful trade.

Criminals should be committed on the probation plan. The Massachusetts is the best we have. Under this system, for trivial offences the criminal is turned over to the probation officer, who secures him employment and keeps watch over him for the period of one year. If he proves incorrigible the probation officer orders him to be arrested and he is then sentenced to a term in prison. Such a sentence should be a probationary one also. The culprit should be detained in prison until he has been taught some useful trade. When he is considered to have reformed and to be able to earn an honest living by his trade he should be dismissed upon the advice of the prison board, which shall be composed of persons competent to pass judgment in such cases. After the prisoner has learned his trade thoroughly he should be allowed the current compensation for that work and then be required to refund to the institution the cost of his maintenance while there. If he can save anything over these expenses he should be allowed to keep that for capital against the time when he is free and started out on his new life. When he is again out in the world, the prison board should see to it that he is provided with work and the opportunity to become an honest citizen.

For major crimes—rape, and *all second* offences the penalty of assexualization should be the law and rigidly enforced. Those criminals who become “repeaters” should be given a permanent sentence and the public thereby saved the additional cost of their frequent prosecutions and sentences.

All the defective and degenerate who are likely to transmit the stigmata of degeneration to the offspring should be

asexualized. Asexualization, while not always limiting the criminal tendencies of the individual, does render the violent more gentle and does prevent the chance of offspring, cursed prenatally, beyond the possibility of reform. Inasmuch as a large per cent of the dependent classes is due to a vicious parentage or heredity, it is certainly the logical course to pursue to prevent the conception of such a progeny. By depriving such people of the power of generating offspring we do not work any serious physical hardship upon them, therefore such a measure can not reasonably be objected to by even the most conservative. Moreover, such a course is in strict accordance with principle of the *relative civil rights* of the public which insures to the people, yet unborn, the protection of the government, which protection saves them from a life prenatally damned.

The municipal government should know that all of its citizens have a legitimate and visible means of support and that *all* be required to earn their living.

Because of the evil effects of tobacco which are transmitted to offspring, minors should be prohibited the use of tobacco and the ordinance strictly enforced.

Inasmuch as more persons die annually from venereal diseases in this country alone than ever fell on any single battle-field, and more persons suffer from serious chronic troubles due to these dread causes than the wounds received in any battle, it behooves legislators, teachers and parents to dare to defy tradition, to realize and proclaim that the double standard of morality is all wrong, and demand reform. It robs manhood of its strength and youth and blasts the life and health of the wife and helpless children. Quite recently science and the microscope have proved what all ages past have failed to discern, the fact that it is just as imperative that men keep their chastity as it is for women to be virtuous, that they need give no thought to themselves for Nature does provide them natural methods for the relief of sexual engorgement without the necessity of carnal knowledge. Hence, the brothels are not only unnecessary but they are absolutely injurious to the individual and society and should not be countenanced under any consideration. If men could from infancy be educated to a right knowledge in these matters there would be a great change in the minds and morals of society. If the law provided the penalty of asexualization for sexual offences such

offences would become very rare and an inestimable boon to the home, the offspring and society be gained.

All gambling dens should be closed, the use of slot-machines and other gambling devices prohibited and the gambling evil suppressed.

Inasmuch as alcohol causes 35 per cent of disease, 75 per cent of the crime, 35 per cent of the imbecility in children and 50 per cent of the poverty that afflicts the race, it must naturally be concluded that the liquor question is one of the most mighty problems we have to solve. It has always seemed to me to be a very irrational, illogical and criminal procedure on the part of the government to make drunkenness a misdemeanor with fixed penalties and at the same time to be party to the cause of that very misdemeanor. If the liquor traffic be a legitimate business, if it be right for the government to derive large revenues from that traffic, then it is certainly legitimate to drink—even to drunkenness. We are taught that the government assures the people *absolute civil rights*, including personal security, personal liberty and the right to acquire property, such as does not menace the rights of others; and, again, that the people shall have the protection of the government. If it be legal and right to sell a man liquor to drink until he is either insensible or crazed from its effects, then the government should protect his liberty and insure him personal security, nor hold him responsible for his acts while in the mental state incident to alcoholism. To do otherwise, as is done under the present system, is like selling a man gunpowder for the purpose of shooting himself, that the government may derive certain revenues from the sale of the gunpowder, and then when he has committed the very act the gunpowder was purchased for to arrest him for so doing. The government all the while failing to realize that in permitting its sale for such a purpose that it risks the man's permanent disability or death with the consequent loss through the legal procedures against him, or the cutting off of his economic value to society, which loss is far in excess of the profit gained.

We have seen that one of the *absolute civil rights* is that no man shall acquire property that menace the rights of others, and yet the above statistics show how alcohol actually does disturb or destroy the rights of others and that no individual or the government itself can be party to the sale of alcohol as a beverage without violating the very principle of jus-

tice and the rights of others. Hence, the liquor traffic is not a legitimate business and should be abolished. Understand me, I do not object to a saloon because it is a saloon but because it deals in a traffic that is so terrible in its far-reaching and demoralizing effects upon humanity.

Legislators and other public officials as well as others say: "We must have the revenues from these sources—the saloon, the gambling den and the brothel, to run our government." Do they ever stop to consider if their revenues to the government are so enormous, how enormous, also, is the cost incident to the evils in their train?

I wish I could secure the actual statistics for the money spent annually in this country for maintaining the dependent and the criminal classes; I have not the slightest doubt but that said cost would even exceed the revenues derived from these sources. Let us consider some of the costs of crime alone in these United States.

Ex Governor Altgeld has found that "there are more than 2,200 county jails, several hundred lock-ups, or police stations, between 50 and 60 penitentiaries, with workshops, machinery, etc. The first cost of these buildings and shops has been estimated at upwards of \$500,000,000, which is dead capital—the interest, at 5 per cent, upon which sum alone would annually amount to \$25,000,000. To this must be added the sums annually appropriated out of the treasury to feed the prisoners, pay the officers, judicial and executive, and keep up and maintain all these institutions, which sums has been at upward of \$50,000,000, to say nothing of the costs paid by the accused; there are, in addition to this, many thousands of policemen and detectives, about 70,000 constables in this country, and about as many magistrates. There are upwards of 2,200 sheriffs, and in the neighborhood of 12,000 deputy sheriffs. Then comes the grand juries, petit juries, judges and lawyers; next the keepers and their numerous assistants for all these prisons. On a whole, there are about a million of men partly or wholly supporting their families from this source, men who are ready to defend this system which provides them and their families with their daily bread."

Think of it! realize, if you can, that 75 per cent of the crime, *i. e.*, 75 per cent of this expense and wretchedness is directly attributable to alcohol. Nor does this estimate include the damage done to private property and private individuals,

nor the cost of maintaining other institutions and charities, which would far exceed this estimate in magnitude.

If legislators will violate the very principles of *civil rights* and permit the sale to the people of alcoholics as beverages, then they should see to it that such restrictions are placed around their sale so as to keep the evils within the minimum limit. The government only should have the power to retail to the individual. These government saloons should be merely warehouses and as uninviting in the interior as is compatible with public decency and hygiene. There should be nothing to advertize them in any way. No minors should be allowed to buy, drink or handle alcoholics, and the public officials in charge should be held strictly responsible for every case of intoxication that occurs in the saloon or directly after the purchaser has left the place. Georgia and the Carolinas have the best laws regulating the liquor traffic in vogue at the present time. That system is practically like the one just outlined. New Zealand, however, has a prohibitory feature under its license system that they might well copy. This system provides that when a "person is guilty of excessive drinking of intoxicating liquors, who misspends, wastes, lessens his estate and greatly injures his health, that no man shall be allowed to give, sell, purchase or procure him intoxicating liquors for the space of one year." Failure to observe this law is made a misdemeanor with fixed and rather severe penalties.

When the National Government shall own and operate its own railroads, telegraph, telephone, cable, merchant marine system and the like; collect a just proportion of taxes from every individual, it will have no need of a revenue derived from such hellish sources.

The municipal government should provide out-of-door and indoor gymnasiums, parks, libraries, reading and debating rooms for both sexes and public halls for every district, if so many are needed to accommodate the public.

Finally, to sum up, all that is good and conducive to the higher development of every individual in the community should be encouraged and supported by the National, State and Municipal Governments; all that cause a tendency to degrade, to lower the type and to create the criminal and degenerate classes should be removed, that the best civil rights of all—aye, even the unborn, may be served. This, then, is the responsibility and care the municipal government should exer-

cise and cause to be exercised toward the dependent and the criminal classes.

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[39 ST. HELENS AVENUE.]

Report of a Case of Malignant Anthrax Edema.

By ELSWORTH SMITH, JR., M.D. AND H. G. MUDD, M.D.,

ST. LOUIS, MO.,

ON June 6, 1900, through the courtesy of Dr. H. G. Mudd, there came under my observation Mr. L., American, aged 55 years, a retired business man, whose history was as follows: No definite hereditary predisposition to disease; he had always enjoyed good health with the exception of dyspepsia for the past two years; more or less excessive indulgence in alcohol for the past year or two; previous to this time he had partaken of stimulants in moderation.

Sunday, June 3d, as was his custom, he spent at his country home in his usual health, until the early afternoon, when he began to experience a feeling of malaise, with chilliness and feverishness. He returned to his home in the city that same evening and from then on to the time of my first visit on Wednesday, June 6th, he continued to have chilly sensations with fever and some abdominal pains with diarrhea. There developed also during that period (the exact date of which was not obtainable) pain and swelling in the region of the lower third of the right leg.

When first seen the temperature was 104°F., pulse 100, respiration 24. There was quite severe pain in the right leg which was swollen and edematous to the knee, suggestive more of a severe and extensive cellulitis than anything else, except that there was less tension in the inflamed structures than is usually present in ordinary cellulitis.

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The story of the case from this date (June 6th) to that of his death, nine days later, was that of a rapidly-spreading and deep-going infective inflammation which involved finally not only the thigh but even the region of the buttock and sacrum. The virulence of the process was so great that wide and deep incisions made into the involved tissues from time to time showed a rapidly-developing gangrene resulting, not from tension of the parts, which at no time was high, but due simply to the virulence of the toxins.

The general symptoms were those of a violent septicemia, the temperature remaining between 101° and 103°F. , pulse 90 to 120, respiration 22 to 40. On June 14th, the day before death, at 5 o'clock in the evening, the temperature went to 106.2°F. Nausea, vomiting, diarrhea, profuse sweating and delirium, all the symptoms in fact which go to make up the picture of profound sepsis were also present.

Agar tubes inoculated with secretion from the inflamed limb were sent to Dr. Amand Ravold, on which he very kindly made the following report:

DR. AMAND RAVOLD'S REPORT.

DR. ELSWORTH SMITH, JR:

I send you herewith a report of the results of the examination of the agar tubes inoculated by you and delivered to me. The tubes were placed in an incubator at 37°C. and the growth which had formed on the medium was studied the next day. I found a thick yellowish-white growth all over the medium in both tubes. Stained cover-glass preparations showed an apparently pure culture of a large thick bacillus with squared ends, some isolated, but the greater number in short and in long chains. There were no spores to be made out, the bacilli being stained uniformly throughout. The growth in the tubes was plated in both agar and gelatine, and the following culture media inoculated, broth, milk, plain and glucose gelatine, potato and Loeffler's medium. The original agar tubes and the agar plates were placed in an incubator at 37°C. and the other tubes and plates in an incubator at about 20°C. On the morning of the 17th the agar plates were studied with a microscope and showed the characteristic Medusa head like colonies of the bacillus anthracis. Cover-glass preparations of the growth in the original tubes showed spores in many of the bacilli. Upon this evidence I reported to you that I was certain that the micro-organism found in the tubes was bacillus anthracis, but that I would complete the examination and report to you later.

All cultures were examined on the twelfth day excepting the gelatine which were studied on the sixth day.

GELATINE.

Plates on the sixth day showed small and large colonies of the Medusa head like colonies, some colonies showing a small amount of liquefaction. Tubes showed a yellowish-white growth along the inoculation thrust with small spike-like growths radiating out of it, giving it a root-like or arborescent appearance. The medium for a short distance along the thrust was liquefied in all tubes. No gas was formed in the glucose gelatine.

BROTH.

Showed a granular deposit in the medium and flocculent masses clinging to the sides of the tubes. Milk was coagulated and peptonized. Potato, a grayish-white layer, somewhat dry looking. Loeffler's medium, liquefied.

PATHOGENESIS.

Guinea-pig, male, weighing 584 grammes. inoculated subcutaneously into the abdominal wall with 1 cc. of 48-hour old broth culture, died on the fourth day. Post-mortem same day; abdomen and part of the thorax edematous; subcutaneous tissue distended with a gelatinous, semi-fluid exudate and scattered through this tissue were many small ecchymotic areas; liver enlarged; lungs pale, red in color; spleen much enlarged, dark in color and very soft and friable. Smear preparations from spleen pulp and blood from heart cavities showed a large bacillus in great numbers. Inoculations were made from spleen into culture media and the bacillus anthracis was again obtained in pure culture.

I am convinced from the above examinations that the micro-organism found in the culture tubes inoculated by you is the bacillus anthracis.

Aside from anthrax being in itself a rare disease, the above case, it seems to me, should be of interest in exemplifying especially the difficulty of arriving at a diagnosis in many of these cases.

Anthrax manifests itself usually in three forms: First, externally, or that of a malignant pustule, where there is a typical initial lesion which renders the recognition of the trouble comparatively easy; second, the internal form (thoracic or intestinal mycosis); third, that of anthrax edema, where the process assumes the form of an extensive and deep-going edema without any apparent initial lesion, and to this latter variety, the case in question belongs.

It is wellnigh impossible to make a diagnosis of these two

last forms without first having one's suspicions aroused by either the presence of some evident etiological factor or the anomalous behavior of the symptoms and physical signs in the case. The presence of either one of which set of data leading to a bacteriological examination and a recognition thereby of the true nature of the affection.

In the case just cited it was evident from the first that a virulent infection was present, originating in the leg, causing an extensive and rapidly-spreading edema with resulting gangrene and a secondary profound general sepsis, and it was further noted that the death of the involved tissues of the limb did not result from tension of the parts but evidently directly from the poisonous effects of the toxins in which the structures were inundated.

It was then the presence of this rapidly-occurring and extensive gangrene with absence of any great tension, so considerably present as the cause of necrosis in the ordinary form of cellulitis that aroused suspicion as to the character of the pathological process and led to the bacteriological examination and thereby to a correct appreciation of the malady despite the absence in the involved limb of anything even suggestive of the initial anthrax pustule.

The above two signs, therefore, viz., gangrene without marked tension should prove of great value in the correct interpretation of such cases.

Once the presence of anthrax was determined, search was, of course, at once instituted to ascertain the source of the infection and the result thereof forms another interesting phase of the case.

As a rule, we know that in external anthrax the inoculation generally occurs on exposed surfaces—as the hand, forearm, neck, etc.; here, though, the infection evidently started in the leg, a part, as a rule, protected with clothing.

After much inquiry the following story was elicited, which furnishes the most probable mode of invasion of the disease. During the afternoon of the day the patient spent at his country home (viz., Sunday, June 3d) he engaged for some time in a game of quoits, using old horseshoes in the place of the regular articles devised for the game. After taking to his bed ill that evening and without having washed his hands after the game of quoits he remembered having scratched very vigorously with his finger nails his right leg and associated the dis-

turbance arising thereafter in the limb with the trauma thus self-inflicted.

Now with the complete absence of any other apparent etiological factor and with the well-known fact of susceptibility to this disease being greatest in the herbivorous animals it seems most plausible to conclude that the infective agency was conveyed from the horseshoes used in the game to the abrasion on the leg, through the medium most probably of the patient's finger nails, even though such a mode be certainly a very unique one. The disturbance of which the patient complained on the afternoon of June 3d, was, of course, in all probability quite foreign to the far more grave affection which developed later, and served only as a predisposing factor to the subsequent onset of the attack of anthrax.

The surgical phase of the case I will leave to Dr. Mudd.

DR. HARVEY G. MUDD'S REPORT.

I saw the case for the first time on Wednesday morning. At that time there was a little abrasion surrounded by an area which looked like cellulitis simulating erysipelas; so closely did it resemble an erysipelatous infection that I did not feel safe in handling the case, and asked Dr. Smith to take charge of it. Some days after this I saw the case with Dr. Smith and found that the trouble had spread rapidly and that the larger part of the leg was edematous though not more so than is ordinarily found in a rapidly-spreading gangrene. There were no large blebs or blisters such as are ordinarily seen in cases of gangrene. The color of the leg was very dark and the idea that it was malignant edema occurred to us long before we thought of anthrax; only toward the close of the case was anthrax thought of and cultures taken.

Incisions were made in the leg with the hope of limiting the spread of the gangrene, though with little hope of saving the patient. The incisions were long and free and deep. There was not much tension. On cutting through the skin and tissues and muscles there was very little gaping and little tension shown. It was a case in which to make a diagnosis was difficult. I have never seen a case of the kind nor heard of a report of a case of anthrax edema as masked as this was.

When I saw the patient the second time the leg was affected up to the groin and buttocks and had already passed the stage where an amputation would do good. When first

seen at the time the infiltration was in the lower leg, amputation might have offered some hope, but no one at that time would have recommended it, and the patient and family would not have permitted it.

The Double-Knife in Histo-Pathology.

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MY intention primarily in the writing of this paper was merely to give a few points on the technique of the double-knife which I am using in the study of microscopic pathologic conditions, but in this connection I deem it advisable to say something on the study of fresh pathologic specimens in general. While working with Prof. Langerhans, of Berlin, I was impressed with the skill shown by him in the study of fresh unstained pathologic sections. It seems that Rudolf Virchow many years ago laid great stress on the importance of this study. As a matter of fact, some of the best work of this master of pathologic anatomy was done with crude instruments, with a few reagents in the shape of a bottle of iodine and acetic acid and a simple microscope. Virchow described many changes for the first time in specimens which were cut with a razor and with little or no staining. To my mind, the greatness of the man lies not only in *what* he has done for pathology but mainly in *how* he has done it, *i. e.*, with crude facilities and with no previous authentic records or literature to guide him. In short, he opens up new fields and laid down *dicta* in a scientific way where, before, all had been erroneous and irrational. It was Virchow who first laid emphasis on the importance of studying changes in the organs as they exist, before they are placed in fixing and hardening fluids. In short, it was his idea to see cellular elements as they existed, or as near as possible as they exist in life. It goes without saying that ordinarily, as we study pathologic

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specimens, we see things in death, and not in life. The nearest approach to studying the *living* changed cells of the organism is by fresh examination of a piece of tissue removed from the living body. The "new era" of pathology will come, I predict, when we can by some manner or means look through our lenses at the living tissues of the body, not at the dead, as we now see it.

I say again, then, that Rudolf Virchow, long time ago, emphasized this point. For years it has been lost sight of, but we are coming back to it, with the swing of the pendulum of reason. Dead tissues have been described and changes accurately noted, yet can we say with certainty that this is the condition of the cellular elements as they exist before life is extinct? I claim that we must approach as closely as possible to a study of conditions as they exist and not as they are after death. To this end, Virchow has used, in addition to his simple razor, an instrument called by him the "doppel-Messer" or double knife. This instrument consists of two blades placed side by side, arranged on a metal handle. The shape of the knife is that commonly called the "Heidelberg blade," *i e.*, plane on one side and concave on the other. The knives, being held in a parallel direction, can be pushed close together by a screw arrangement on the handle, while the distance between the blades is regulated by this wedge, worked on a screw at the end of the handle.

The technique of its use consists in arranging the blades at a suitable distance, dipping the knife into water so as to secure a film of water between and over them, holding the knife perpendicularly to the surface of the object to be cut, bringing it firmly down on the organ, imitating the bow-string movement of the violinist, then swerving the instrument from side to side so as to release the specimen; again dip the blades in water and the specimen floats out. It can then be mounted in some indifferent fluid, preferably normal saline solution.

The examination of fresh specimens means quick work and an insight into conditions as near as possible as they exist in nature. It is, of course, self-evident that with first work in this branch of microscopy, there is great difficulty in recognizing the conditions, even in recognizing the elementary structures of tissue. This is, however, acquired by practice. A point which urges me to insist on the study of fresh pathologic specimens is that we see some changes in such specimens

which can never be seen in a fixed, hardened and stained specimen. For instance, cloudy swelling, hydropic, fatty or slimy degeneration are conditions only to be seen in fresh specimens, never in stained specimens. This examination must take place in an indifferent solution. Physiologic salt solution from 0.6 per cent to 0.75 per cent is probably the best medium. In order to hold the medium fluid, it is necessary at times to ring the specimen with vaselin or melted paraffin.

We know, too, that some information can be gained from the fresh specimen by simply making what is called by the Germans an "Abstrichpräparate" which consists in running the sharp edge of a knife over the surface, for instance, of a tumor and bringing off some of the characteristic cells. But this is not comparable with the use of the double-knife. It is especially in conjunction with autopsy work that the advantages of the double-knife are to be seen. We know that the pathologist can fairly well make out with the naked eye appearances most of the gross changes of tissue, but he is positively at a loss to diagnose some conditions at the autopsy table which would be of supreme importance to him in making up his anatomical diagnosis. It is to often the case that conditions of nephritis are diagnosed from the naked eye picture where microscopic study afterwards revealed a different tale. I myself have seen conditions diagnosed "interstitial change" or "fatty change" at autopsy where later examination showed the error of it all. By the use of the double-knife in all doubtful cases, a positive idea of the condition can be ascertained. Neoplasms at the post-mortem table are often difficult to correctly diagnose. Here again a fresh cut will clear up the condition. Aside from the use of this instrument at the autopsy, it can be utilized as a substitute for the freezing microtome in the diagnosis of tumors during the course of a surgical operation.

In order to bring out special parts of a section, various chemicals have been utilized by Virchow and his followers. One reagent after another can be applied to the same preparation, and in this way: On one side of the cover-glass place a small piece of filter paper which will absorb most of the fluid by which the object is surrounded and then drop the next fluid at the other edge, when by capillary attraction, it flows into the preparation. This can in turn be absorbed and the next fluid used. Of all the fluids used in conjunction with

fresh pathologic work, acetic acid is probably the most important. The action of acetic acid on fresh tissue is to cause the connective tissue and protoplasm to become more transparent and to cause the nuclear structures shrink, thereby bringing them out more sharply. Mucus is dissolved. Acetic acid is, therefore, utilized when we wish to quickly look at the form, arrangement and number of nuclei. Of greatest importance is acetic acid when we wish to differentiate between an albuminous (parenchymatous) and a fatty degeneration; albumin is dissolved and fat changes are brought out more clearly by acetic acid. Elastic elements of tissue, together with various organisms found in tissue are brought out sharply by it. It can be used either in concentrated form, as glacial acetic acid, or in solution of 2 to 5 per cent. Acetate of potassium solution is also used in bringing out nuclei strongly. Where there is a calcareous change suspected, we use hydrochloric acid in 3 per cent solution, whereby gas bubbles are produced (CO_2). One part of Lugol's solution in four parts of water is an excellent means of making out amyloid changes. Glycogen-containing bodies of amyloid substances are stained black. Another means of detecting amyloid change is by putting the fresh section in a solution of gentian violet; amyloid parts are stained deep red while the other parts are stained violet.

Summing up the reasons why we should use this method of examination, I will go over the processes which can be seen in the first section:

1. Where there has been a hemorrhage into tissue, we can see it best in the fresh specimen, getting a better idea of the age or the hemorrhage. Hematoidin crystals can be made out, also amorphous yellow hemosiderin.

2. Necrotic changes can well be investigated in the fresh specimen.

3. Atrophy is easily made out. Should we want to examine muscles and nerves in atrophy, then the use of maceration fluids are necessary.

4. Cloudy swelling; parenchymatous degeneration. These changes which can only be seen in the fresh specimen. To differentiate this condition from fatty changes, as we have said before, use acetic acid, whereby the intracellular nuclei are dissolved, while fat is sharply defined.

5. Fatty changes: To detect fat use acetic acid, as before explained. Again, use a solution of either and chloro-

form which rapidly dissolved fat in tissue. Another excellent means of detecting fat is the osmic acid staining.

6. Hyaline and colloid degeneration can well be studied in this way.

7. Amyloid degeneration has already been alluded to. The micro-chemistry of this substance can best be solved in the fresh specimen.

8. Inflammation of tissue in general can well be studied in the fresh specimen unstained. Should staining be deemed expedient, dip the specimen in methyl green and good pictures will be forthcoming.

9. Tumors of various sorts, if of good consistence can be diagnosticated in this way.

I have thus laid down good reason, I think, for the pathologist, especially the autopsy physician, to take up the study of fresh specimens. I have seen its workings under a master, my teacher, Prof. Langerhans, and I cannot commend it too warmly. I am supervising the autopsy work in our City Hospital and am using my double-knife in the dead house with excellent results and in what I hope is a scientific manner of completing my anatomical diagnoses.

I have brought with me two specimens or lesions of the liver which I propose to cut before you and show you the microscopic picture. In the one, the fatty change is quite marked. In the other it is not so well established. In this first specimen, there is a condition of fatty degeneration and infiltration, with central atrophy of the cells, a condition of *hepa muschatum* mixed with fatty degeneration. In this condition we have a fatty infiltration, the fatty globules being around the *veno centralis*. Cyanotic atrophy of the lesser cells leading to the secondary disturbances.

[422 COMMERCIAL BUILDING].

Surgical Operations on the Aged.

By A. H. MEISENBACH, M.D.

ST. LOUIS, MO.

THE aged like the middle aged and the young are amenable to the various surgical diseases that the latter are, hence the surgeon is often called upon to operate on them. It is a general belief, among the laity at least, that surgical operations on the aged are dangerous or unjustifiable. How often do we hear the remark, that, "he or she is too old to operate on; that they will not withstand the shock of operation."

To this belief we cannot give consent. We do not believe that age, *per se*, is a bar to surgical operation. Surgeons well know that people who are inclined to be delicate and quasi invalid will often withstand the shock of surgical operation better than those who are robust and lead an active life.

In the former the invalidism has inured them to confinement and rest, and makes them bear the effect of surgical confinement with greater ease and less fretting, than the robust, who, when forced to be confined in a given position for a length of time worry and fret—a condition unfavorable to recovery.

In the aged we find that Nature has made provision for a greater equipoise of the various functions—their lives are more regulated—there is an absence of the turmoil and restless energy of middle life which in itself is a factor of self destruction.

Furthermore the individuals who have reached an advanced period of life do so by virtue of an inherited good constitution, which stand them good at this period of life. In these patients we find the organs yet (most of them) in a wonderful state of preservation.

The main consideration, of course, in the question of surgical operations in the aged is that there are no grave lesions of the vital organs, heart, lungs and kidneys especially. These being in a satisfactory condition, we can undertake

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quite extensive operations on the aged, keeping, however, certain facts in view.

As a rule, the aged do not bear well—first, the abstraction of heat; second, the loss of blood; so that in our operative work these factors should be borne in mind. In operating, the conservation of the animal heat especially should be looked after, notably is this the case when the abdomen is opened.

To this end the heating of the operating room should be so constructed that it can be quickly run up, say to 90 or 100 degrees. An operating room where abdominal work is done should never be below 80°F. The room should be warm, even at the expense of the comfort of the operator, assistants and nurses. The patient should be well protected by flannel blankets or, better still, by a blanket suit as suggested by Homans, of Boston. This suit consists of closed leggings, extending onto the body, and a jacket with long sleeves extending over the hands and closed at the ends. The material used is heavy white blanketing. A table constructed so as to have it kept warm by hot water canal, or other means, is valuable; especially, also, after the operation, should the patient be well protected. I fear from what I have seen at times that this is not fully appreciated, having seen patients taken from warm operating rooms through chilly corridors, the patient not properly covered. The room and surroundings of the patient should be rather warmer than for younger patients.

All operations should be as bloodless as possible. The parts should be rendered so if operating on an extremity by Esmarch's tourniquet; elsewhere the careful use of hæmæstatic forceps or by ligature should be indulged in. The use of mumal salt salution under the skin should always be employed whenever indications of a lowered blood tension suggests itself.

Anesthetics.—"The less of any anesthetic any patient gets the better for the patient." This doctrine applies equally as well to the aged. The anesthetic I use is chloroform and I often anticipate its use by a hypodermic of morphia and a good "horn" of whisky. I have found that this minimizes the amount of chloroform necessary during the operation. 10 to 20 grains of chloreton one-half hour before operation have also been suggested, the effect claimed being nerve tranquillity, less amount of anesthetic used and less likelihood to post-

operative nausea and vomiting. I have tried this several times on young subject with apparent good results. Local anesthesia should be employed if any contraindication to a general anesthetic exists.

Several years ago I operated on a woman past 65 years of age who, the attending physician stated, had a heart lesion, and was afraid of a general anesthetic. The woman was suffering from a strangulated femoral hernia. In this case I used a 10 per cent cocaine solution with good results. The bowel was gangrenous so that a resection was necessary. Approximately (end to end) was done with a Murphy button. The only pain the woman complained of during operation was when pulling sharply on the messentory. She made a good recovery from the operation but died a few weeks after on account of inanition produced by an intestinal fical fistula. The button had produced a slough on one side of its approximation.

I have found that the mental equation is a decided factor in surgical operations on the old as well as the young. Those patients always doing better who had "*their nerve*" with them, than those who were inclined to be pessimistic. If there is opportunity for preparatory preparation of the patient it should be carefully carried out, taking care, however, not to deplete the system too much by over purging and low diet before the operation.

On general principles, I am inclined to believe that even in younger subjects we are apt to over-do the preparatory treatment, especially as to purging.

The after-treatment should also be carefully attended to. As soon as the stomach will permit after operation, alcoholic stimulants should be given; if not exhibited *per os*, the rectum should be utilized; also by hypodermic syringe.

As to the class of operations I shall cite in illustration in this paper, I will state that they are a few of the number I have operated on. They are all capital operations and go to illustrate that operation should not be refused on account of age. The determining facts being as in the younger.

- i. Is the operation necessary,
 - a. To save life;
 - b. To prolong life;
 - c. To add to the comfort of the patient for the rest of the allotted years.

If these questions can be answered in the affirmative the patient should have the benefit of our surgical skill.

Under all circumstances, in every case, the patients and friends should be fully appraised of the import of a surgical operation.

CASE I.—GANGRENE OF RIGHT LEG.

Mrs. H, female, aged 63 years. Saw patient November 23, 1893, eleven years ago, had paralysis of right leg. Four weeks previous had an attack of "grippe," this was followed by swelling and gangrene of the foot. Gangrene of a dry nature; slow progress. Amputated leg at Rebekah hospital December 19th. Amputation bloodless, lower third of the femur. The wound healed nicely and the patient left the hospital January 4th.

CASE II.—GOITER, UNILATERAL, RIGHT SIDE.

Mrs. B., female, aged 61 years, well nourished. The patient had had a goiter for a number of years, but it did not trouble her very much until the last year, when she began to develop symptoms of dyspnea and nervous tremours which became more marked and come on oftener lately, sometimes having as many as four or more attacks daily. The goiter was not very large but very firm (parenchymatous variety), pressing backwards on the trachea and on the pneumogastric nerve. Operated December 11, 1903; usual operation for goiter—leaving in part of the gland so as to escape the development of myxedema. The patient recovered nicely from the operation and left the hospital December 28th, improved in health.

CASE III.—VENTROFIXATION; RETROVERSION OF THE UTERUS.

The previous patient also had a marked prolapsed and retroverted uterus which caused her much distress; pelvic pains, backache and bearing-down pains. Having recovered from the previous operation she again entered the hospital. I performed a ventrofixation, with good results, notwithstanding the fact that she had an attack of intercurrent bronchitis, so that in her coughing spells I was afraid that she would burst the abdominal wound. She made a complete recovery.

CASE IV.—GALL-STONES; CHOLECYSTOTOMY; CHOLEDOCHOTOMY.

Mrs. B., aged 70 years, was brought to my notice in the latter part of August, 1900, by Dr. Volker, of Carondelet. She had been a sufferer for a number of years from stomach cramps; several physicians had seen her and a diagnosis of gall-stones had been made. A few weeks previous to my seeing her she had been under observation in a

private hospital; operation was not done, for what reason I do not know. I found the patient an intelligent woman, of wiry built (very weak, however) and strong will-power; she was very sallow; pain and tenderness over right hypochondrium; fever of an intermittent type, accentuated when paroxysms of pain came on; temperature 99° to 100° F. Pressure over the gall-bladder caused pain. Diagnosis, gall-stones.

The patient was very determined, and said: "Doctor, I don't want to live this way any longer, I want to get well or die." I told her an operation was the only hope and to this she consented.

She was taken to the Lutheran Hospital and the preparatory treatment was strychnia, $\frac{1}{100}$ gr., hypodermically, three or four times a day; stimulants, alcohol baths. I operated September 3; anesthetic, chloroform; sulphate of morphine, $\frac{1}{4}$ gr., before anesthesia. Vertical incision at the border of the rectus; when the belly was opened gall-stones in the gall bladder were revealed, also one in the common duct. The gall-bladder was opened and stitched to the abdominal parietes; the common duct was opened, the stone removed and the duct left open; a rubber drain was carried down to it, fastened by one stitch of fine catgut and iodoform gauze packed around it, both tube and gauze were carried out of the abdominal wound at the side of the gall-bladder. The rubber drain in the gall bladder rests in the wound which was closed with silkworm gut. She reacted well from the operation, which lasted one hour and forty minutes. The temperature never exceeded 99.2° F. She left the hospital at the end of October, the convalescence being prolonged on account of the double drainage of the peritoneal cavity and the gall bladder.

The last I heard of her, some months since, was that she was in good health, skin clear and had gotten fat.

Cholelithotomy is one of the most difficult operations in gall system surgery; difficult on account of the deep seatedness of the field of operation and also on account of the technical difficulties as to incision and getting out the stones. Nevertheless the patient recovered; thanks to a naturally good constitution and a determined will. Without operation this patient would have, in a short time, been gathered to the great majority. The result well repaid the operative risk.

CASE V.—ENLARGED PROSTATE; VIOLENT CATHETERIZATION; FALSE PASSAGE; RETENTION OF URINE.

Mr. D., aged 84 years. Operation, suprapubic cystotomy, prostatectomy, retrogressive catheterization. I was called to see the patient, an inmate of the Memorial Home; a day or two before he

could not pass his water. An aged M.D., also an inmate of the Home, tried to pass a stiff No. X silver catheter, he did not succeed but got blood instead of urine. When I saw the patient his bladder was over-distended—nearly up to his navel, I tried to get into the bladder with soft rubber catheters, flexible metal prostatic beak and filiform bougies but did not succeed. I aspirated the bladder above the pubis and again tried to get in with instruments *per viam naturalem* but again failed. After three aspirations and repeated attempts at introduction of instruments I had the patient sent to the hospital where I opened the bladder suprapubically, resected the middle lobe of the prostate, and did a retrogression catheterization, leaving the catheter in for three weeks. The patient recovered from the operation without any unusual symptoms, except a threatened pneumonia, which rapidly subsided under treatment. The patient, with the exception of a small fistula, is in good health.

This case is also interesting on account, first, of age; second, of the previous "*violent catheterization*" which may be very serious false passages leading to infection and urinary fever; third, the combined operation of suprapubic systotomy and prostotecting.

CASE VI.—STRANGULATED FEMORAL HERNIA; HERNIOTOMY; RADICAL OPERATION.

I was called to see Mrs. E., aged 65 years, who since the earlier part of the night before had been suffering from a rightsided femoral hernia. The patient is a spare-built woman, intelligent, with strong will power; she was not suffering much. There was a tumor in the right femoral region the size of a hen's egg. Attempts at reduction had been made but without success. I advised operation as the safest means of dealing with the case; she assented and was transferred to St. Anthony's Hospital for immediate operation, which was performed at 11 o'clock that morning; chloroform anesthesia, with $\frac{1}{4}$ gr. morphine. I found a hernia chiefly composed of omentum, the knuckle of bowel being very small; the bowel was dark and congested, but the epithelium was not destroyed. I deligated the greater part of the omentum in the sac and cut it away. Having satisfied myself that the bowel was all right it was dropped into the abdomen. The various steps of the radical operations were then carried out; the patient recovered from shock, was not sick and on the tenth or twelfth day was out of bed completely well.

The above related cases illustrate a wide range of capital surgical operations on the aged. This list might be ex-

tended but would be of no material interest, nor would it help to further elucidate the object of this paper, *ie.*, to demonstrate the feasibility and safety in operating on patients advanced in years.

From the above cases we are justified, we believe, in drawing the following conclusions:

1. The aged bear capital operations relatively well.
2. Age, *per se*, is no drawback to surgical operation, everything else being equal.
3. The aged, under proper conditions, should be given the benefit of our skill in surgical work.
4. We must bear in mind that the aged do not bear well the loss of heat and blood.
5. In our surgical work the foregoing must be kept in mind and proper means employed to prevent the same.

Vesico-Vaginal Fistula; Operation According to Technique of Freund; Report of Case.

By FRANCIS REDER, M.D.,

ST. LOUIS, MO.

THE relative position of the bladder to the vagina is such that when the vitality of the immediate tissues becomes impaired, a slough or an ulceration may result, causing a direct communication between these parts through which urine will escape into the vagina. Such a condition is known as a vesico-vaginal fistula.

The most frequent cause of a vesico-vaginal fistula is a traumatism resulting from a tedious and difficult labor, caused by an impaction of the child's head in a narrow pelvis, or a neglect of the condition of the bladder during labor. A vesico-vaginal fistula may also be caused, exclusive of operation (vaginal hysterectomy) and cancerous disease, by the improper use of instruments or from the presence of foreign bodies in the bladder or vagina.

If the fistula is the result of labor we may usually look

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for a transverse opening. If, however, the fistula has been excited by the action of instruments the opening is more apt to be longitudinal.

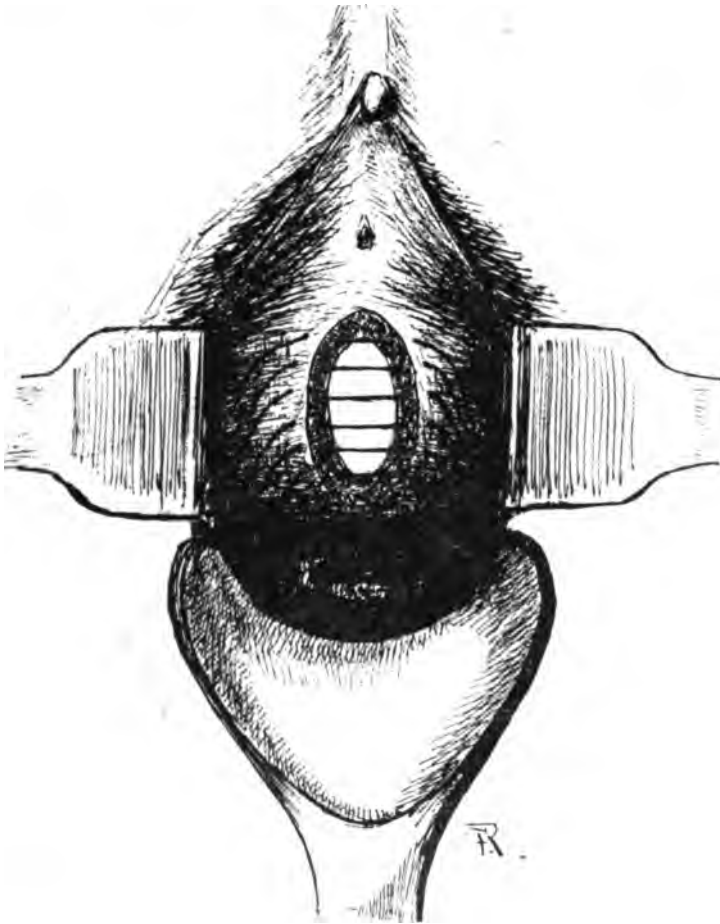


FIG. 1.—Classical Operation for Vesico-vaginal Fistula. In a fistula permitting the Classical Operation little or no loss of tissue has occurred; sutures in place, but not tied.

The evils resulting from the existence of a vesico-vaginal fistula, as well as the difficulties of the cure, will depend in a great measure on the position, size and condition of the opening, these evils and difficulties being greater in proportion to the proximity of the fistula to the bas-fond of the bladder, and least when it is in or near the anterior portion of the urethra.

In considering the treatment for vesico-vaginal fistula the more recent advances made in the operative technique since the antiseptic era have given us a reasonably certain amount of success that we may look upon the treatment as a curative one.

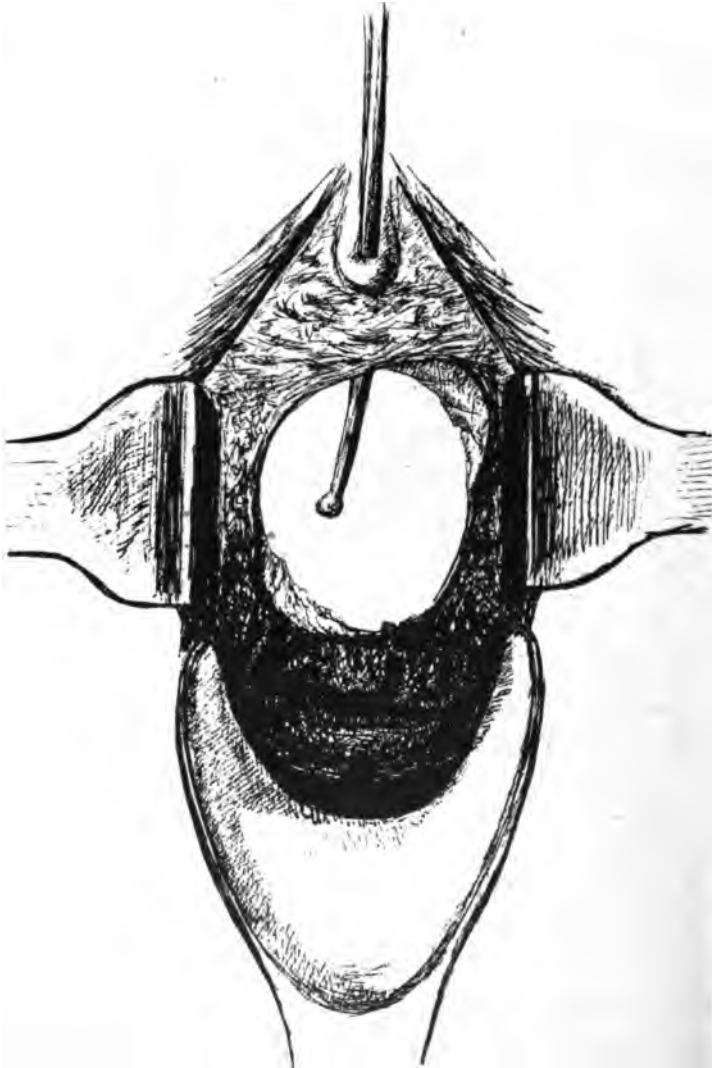


FIG. 2.—Vesico-vaginal Fistula showing the loss of tissue sustained by repeated efforts to effect a closure.

Like any wound, the course of a fistula of this character uninterfered with is toward closure. This closure may take

place by primary union or by granulation. A small fistula closing without operative assistance will do so in a few weeks. An opening in the vesico-vaginal wall that has not closed after several months will, from the time of the accident, unless aided by an operative procedure, become an intractable affection.

In the cure of vesico-vaginal fistula the treatment preparatory to the operation is of the greatest importance. It becomes peremptory that the general condition of the patient be brought into the best favorable state. A vesico-vaginal fistula is not a "hurry-up" case and it is well that the patient be informed of this at the very beginning of the treatment.

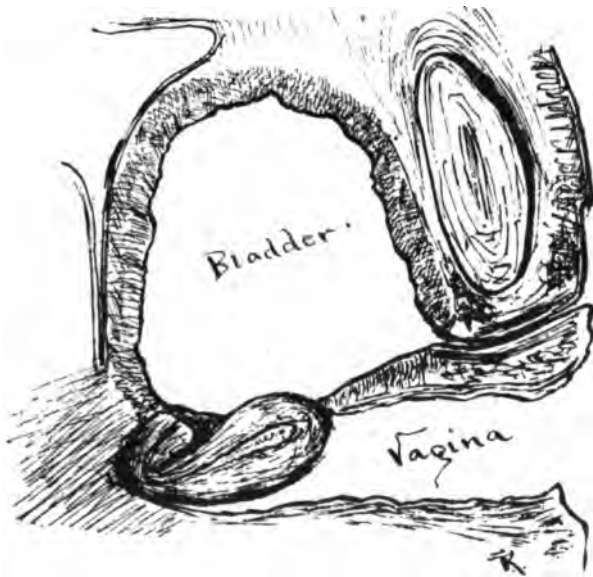


FIG. 3.—Freund's Operation. The uterus is brought into the vagina and is used as a plug in the opening of the bladder; it is sutured to the freshened edged of the fistula.

Special attention should be paid to the excoriated and edematous condition of the external organs of generation caused by the irritation of the urine. Frequently an eczema extends over the nates and upper part of the thighs. The mucous membrane of the vagina is not infrequently swollen and reddened, often containing sloughing necrotic tissue, while the edges of the fistula are covered with sabulous and offensive phosphatic deposits. The urine is almost always

phosphatic and should be kept in an acid condition or there will be no local improvement. These conditions must be corrected before the fistula is subjected to an operative procedure. It may require weeks before the proper conditions are brought about and may cause some dissatisfaction on part of the patient, however, the preparatory treatment is a matter essential to success. Without it the most skilfully performed operation will most certainly fail.

For the treatment of vesico-vaginal fistula the operative treatment is the only one to be considered. In the milder cases success is invariably certain by simply freshening the wound margins and bringing them together with sutures, while in the graver cases a more extensive operation becomes imperative.

The difficulties attending a cure of vesico-vaginal fistula have led surgeons to suggest the use of different instruments and to recommend various modes of operating. Among the methods in vogue the most successful and most frequently performed is the one known as the classical. This method consists in simply denuding in a funnel shape, the margins on the vaginal surface, leaving the vesical mucosa untouched. The neat and accurate apposition of the parts with suture completes the operation.

By another method the defect is covered by flaps transplanted from the contiguous vaginal wall.

Opening the abdomen and cutting through the vesico-uterine peritoneum, thus detaching the bladder from the fistula, sewing up the bladder wound and then uniting the peritoneum and closing the abdomen, is another method.

Denudation on the vesical mucosa from one side of the fistula around to the other and uniting this surface to the freshened anterior part of the fistula, has been successfully performed.

Another method consists in dissecting the bladder loose from the vagina and sewing up the vesical wound separately. The anterior face of the uterus is used to close the vaginal defect.

A method occasionally resorted to consists in freeing the bladder around the posterior two-thirds of the fistula, bringing it forward and uniting it to the anterior third, which is freshened on its vaginal surface.

Probably the most heroic method consists in the opening of

the posterior fornix of the vagina, bringing forward the body of the uterus and attaching it with its posterior surface to the edges of the fistula on all sides, thereby closing the fistula, using the body of the uterus as a plug.

It is plainly evident that a certain degree of dexterity and skill must be necessary to execute the technique of any of the methods enumerated to insure success.

I have had occasion to operate upon a sufficient number of vesico-vaginal fistulæ to fully appreciate the gravity and difficulty of such an operation.

Exclusive of the classical method all other methods present their individual obstacles which are sometimes extremely difficult to overcome.

The fistulæ best suited for the classical method are those where the parts present a healthy condition, where we find an absence of hypertrophy and induration of the edges of the fistula, where no previous attempt at closure has been made and where time has not been given the opportunity to form the cicatricial bands and scar tissue which so frequently complicate an otherwise simple operation. For the classical operation the time offering the best advantages for an operation would be six to eight weeks after labor. The tissues then will be found soft, vascular, with the normal laxity not yet destroyed by fixation and atrophy. The classical operation performed under such conditions would with much certainty cure the fistula—be it small or large.

In performing the operation it is well to have a goodly amount of loose tissue at your disposal. If such tissue is not forthcoming it becomes advisable to resort to surgical measures upon the adjacent tissues in the hope of relieving the tension caused by the scar tissue. It is always well to have a definite idea as to how the denuded margins of a fistula will allow of approximation before the true condition will be revealed by pulling upon the stitches. It is at this stage of the operation where usually the greatest disappointment takes place.

Like in all plastic work good judgment, skill and dexterity on part of the operator is necessary to success. The surgeon feels very keenly a failure in a plastic operation. He feels the loss of valuable tissue and deplores the increasing difficulties in effecting a cure usually arising out of such a failure.

Two years ago a case of vesico-vaginal fistula came under my care that presented anything but an encouraging outlook for a cure. The patient was 40 years of age and clearly showed the mental anguish and distress this intractable condition had wrought upon her. She had been subjected to operation for the cure of this fistula five times within two and a half years with no improvement in her condition. In fact, her condition was worse. The condition of this woman dated back to the birth of her third and last child, five and a half years ago. The labor was a very tedious and difficult one, delivery being eventually accomplished with instruments.

The conditions as they presented themselves upon examination were as follows: Labia majora and minora excoriated and swollen; an eczema about the external genitalia and inner side of the thighs. The mucous membrane was covered with an offensive phosphatic deposit.

An opening with smooth and atrophic margins in the vesico-vaginal septum large enough to readily admit two fingers permitted the much congested bladder mucosa to protrude. This fistulous opening began about one half-inch back of the introitus and extended up to a cicatricial mass that partially imbedded the cervix. On the right side of the fistula there was a marked cicatricial band.

After a three weeks' preparatory treatment consisting of boric acid douches, sitz baths, nitrate of silver applications to the eczematous area, internal administration of benzoic acid and tonics, the patient's condition appeared favorable for operation.

During the three weeks of preparatory treatment the method of operation that would give a reasonable amount of success was almost my constant thought. I determined upon a method devised by Freund, and felt assured that if I did not meet too great a difficulty in bringing the uterus into the vagina the defect could most likely be greatly improved if not cured. The operation was performed in the extreme lithotomy position with hips well elevated. Posterior and lateral retractors exposed the field. Douglas' cul-de-sac was opened and the uterus was drawn out into the vagina. This was done with some difficulty. Silk ligatures passed through the body of the uterus had to be substituted for the tenaculum on account of the easy manner in which the uterine tissue could be torn. After considerable manipulation the posterior wall of the

uterus was brought into the opening of the bladder. The edges of the fistula having been freshened in the usual way, the posterior surface of the uterus was next scarified and scraped on both sides in front of the broad ligament and sutured to the freshened edges of the fistula with a continuous catgut suture, using a small curved needle. This part of the operation proved the most difficult. After the suturing had been completed, sterilized milk introduced into the bladder gave no evidence of leakage. The opening into Douglas' cul-de-sac was loosely packed with strips of gauze; the vagina was also loosely packed.

No permanent catheter was introduced. The bladder, however, was relieved every three hours by catheter. Three days following the operation the urine showed evidence of blood. It cleared on the fourth day and remained clear. One week after the operation the packing in the vagina was removed and an opening was made in the fundus of the uterus to afford an exit for any menstrual blood. The packing in the cul-de-sac was also removed and fresh gauze introduced. The patient was allowed to pass urine without assistance and did so without any inconvenience one week after the operation.

Two weeks after the operation a leakage became evident. Examination disclosed a small opening on the left side near the cervix. The edges about the opening were freshened and closed with catgut suture. Secure union followed. Six weeks after the operation the patient was discharged as cured.

A year later I had occasion to see this patient and found her in excellent health. Examination revealed a marked atrophy of the uterus and considerable shortening of the vagina caused by the serosa of the uterus and the mucosa of the posterior vaginal wall uniting through inflammatory deposits.

Menstruation occurred four times after the operation and then ceased. On the fourth day after the operation the temperature rose from 99.5° to 100.6°F., pulse beat ran from 90 to 104. A saline cathartic brought temperature and pulse back into an acceptable range.

[4629 COOK AVENUE.]

EDITORIAL.

THE REMUNERATION OF PRESIDENT MCKINLEY'S MEDICAL ATTENDANTS.

At the forthcoming meeting of Congress an appropriation will be made to pay for the services of the medical attendants to the late President McKinley. While at first glance this may appear to be of concern only to the Government and to the medical attendants themselves, it is, nevertheless, a matter in which the profession in general has a deep interest, for it is a public example of appreciation by the Government of the value of the services rendered by the medical profession, and will in no small way fix a standard of value in the minds of the public. It will therefore redound to the advantage or disadvantage of the profession accordingly as the amounts are generous or small.

There is no one so poorly paid in accordance with the amount of services rendered as the physician. The laborer is certainly worthy of his hire and we believe that whenever it is possible the physician should be well paid for his services. The fees paid by the Government to the attendants of President Garfield should not be taken as a criterion, for that was twenty years ago and medical science has since that period gone forward with tremendous strides and the valuation of this increased knowledge and ability should have increased in proportion. Even for that period the remuneration of President Garfield's physicians appears to us to have been insufficient. Six surgeons were in attendance upon the President for a period of nearly twelve weeks and received a total remuneration of \$35,500, or proportionately about \$500 a week for each. It is probable that this amount was not shared equally and that some received more than others, nevertheless this amount appears small for an attendance for so long a period by the foremost surgeons of America at that time as were Drs. D. W. Bliss and Frank H. Hamilton.

The most prosperous and progressive nation of the world can not afford to be niggardly in rewarding the President's surgeons. Their

work was commendable in every particular for no better could have been done anywhere in the world, under any circumstances. That an impaired vitality failed in recuperative power and that a fatal issue finally supervened was through no fault of theirs. Theirs was complete and thorough as far as was possible for human agency to be, and for their work they are deserving well at the hands of their countrymen. The medical profession is generous with its services and in countless instances it is bestowed with no hope of reward, and verily the days of the promised return of the bread cast upon the waters are indeed many.

When ever it is possible the profession should be well paid and in view of the tremendous responsibility borne by the chief surgeon and operator in the case of President McKinley, as well as for his knowledge and skill, Dr. Matthew D. Mann should receive not less than \$50,000 for his entire services. For his assistants at the operation \$5,000 each, and for his associates in the subsequent attendance upon the distinguished patient, \$2,000 a day for each. Such an estimate is not too high and in our opinion entirely reasonable in view of the seriousness of the injuries of the patient and the great responsibility and anxiety borne on account of his exalted position. The profession as an unit should demand that they be well paid for their services, and whatever action Congress may take in this regard we will have the satisfaction of knowing that they did their duty well whether justly rewarded therefor or not.

CLINICAL MICROSCOPY FOR THE GENERAL PRACTITIONER.

It is not within the reach of many of us to become proficient in laboratory methods carried to their most scientific and ultimate ends, but all may render work more accurate and more satisfying by making an effort to bring the laboratory into daily use in a purely clinical way. John A. Wyeth, in his oration before the Fifty-second Annual Meeting of the American Medical Association, reported in *American Medicine*, shows how clinical microscopy and bacteriology should become a part of every surgeon's requirements.

While it is true that few surgeons now undertake serious operations without a certain amount of investigation by laboratory methods much more and much better work is to be desired. No surgeon with whom we have been in contact has been possessed of a divine intuition enabling him to "tell at a glance" exactly what the conditions present in a given patient, even though we are soberly assured by the laity that there are such men and are given to understand that they are the ones most to be sought after.

Clinical microscopy and bacteriology are of recent development in their present advancement and many men yet in middle life were taught almost nothing of them during college days. They find it, no doubt, difficult to take up, for they have learned to rely upon other methods of diagnosis and when occasionally they are driven to a recourse to the microscope they have the work done by a pathologist or by some clinician whose training has better fitted him.

We believe, however, that it is desirable for each worker to learn something of the methods himself, for he thereby gains a more comprehensive and co-ordinated conception of conditions he may be called upon to relieve. And this does not involve a long course of study and preparation.

Some of the work necessitates the keeping of pure cultures, the equipment of the laboratory with intricate apparatus involving almost constant attention. This must of necessity be referred to the few whose tastes and time have allowed the required preparation, and subsequent devotion to, a line of work which admits of little diversion in the field of general work.

We commend Dr. Wyeth's oration for careful perusal, believing that what he sets forth is easily within the reach of all surgeons as well as physicians in the larger communities and that in most smaller places arrangements could be made to do the simpler work, the more difficult (such as involves much apparatus) being sent to the larger cities.

Medicine, as an uncertain science, would receive an impetus toward certainty which would enhance its standing and increase its usefulness.

THE DECADENCE OF THE NEGRO.

In the working out of the problem of the survival of the fittest the handicap imposed by Nature upon the black race is slowly but surely telling against the negro. His little knowledge and his indifference to the requirements of sanitation compel him to suffer the impost of a heavy penalty in the form of disease engendered by his surroundings. Torn from his moorings by the tide of war the negro in America is drifting steadily toward oblivion and will eventually disappear below the sociologic horizon, following, but more slowly, the North American Indian into extinction. The race problem will eventually solve itself, possibly in less than a century, for the negro in America has served his purpose and must now move on to give place to the resistless Anglo-Saxon whose manifest destiny it is to control the world.

The coming of the negro to America was the result of the needs of conditions then existing and the necessity for their fulfillment in the development of the country and particularly of the southern half. With the termination of these conditions by war, a new era in the development of the Southland was inaugurated in which the dark-skinned race is but little available and as a free agent the negro is left to work out his own destiny. That he will play any part of importance in the further development of his adopted country is improbable and as an economic factor may be ignored, for as a race he has fulfilled the object which made his presence necessary and is now a discarded bit of the mechanism of the world's advancement.

Their gregarious tendencies have caused them to gather into towns and villages in large numbers and to exist there under conditions far less favorable to their existence than in the country districts. The urban life of this hapless race is accurately described by Dr. Seale Harris, of Alabama, in *American Medicine*, who states that they are poorly fed, improperly clothed, and whose homes are located on the lowlands in the suburbs of the towns, where the dampness of the atmosphere predisposes to tuberculosis and where all the filth and impurities of the towns drain directly into their wells and streams, contaminating their only source of water supply.

Harris further adds that with such surrounding and an utter lack of regard or appreciation for the laws of health they become very

susceptible to all forms of disease, particularly typhoid and malarial fevers, and tuberculosis; and for the same reasons their tissues, having less powers of resistance to the ravages of disease, they fall easy victims to the fell destroyer.

In an address made in 1890 on "The Sacrifice of a Race," Dr. Barringer, of the University of Virginia, expressed the opinion that the negro at no distant day is doomed to racial extinction and that there was nothing more certain than that he will go as the Tasmanian and Carib have gone. He believes that the dawn of the Twentieth Century finds the American negro at the pivotal point in his history, and in the coming years his decrease in population and strength will be more rapid than his increase has been.

The final census report for the entire country recently given out, shows a lessening of the rate of increase for the negro race, the percentage having fallen from 12.5 in 1890 to 12.2 in 1900. It has been reported in a lay publication by a writer who has studied the condition of the race in the black belt of Alabama that the rate of births is diminishing among them. Whether statistical records are available to determine this with any degree of accuracy, the fact remains that with a race already weakened and attenuated by vice and disease, the offspring enter upon life illfitted to bear its vicissitudes and to this the conditions of their subsequent existence add a heavy penalty.

For the negro race in America the handwriting on the wall has but one interpretation—extinction.

VALE.

With this issue the present editor of the *COURIER* lays aside the goose-quill and climbs down from the editorial tripod upon which he has sat enthroned for the past two and a half years. It is with reluctance that we relinquish a duty which we have found enjoyable and, in experience, profitable, but the pressure of other duties leaves insufficient time to be devoted to it.

We believe in the higher ideals of the medical profession and during the period of our editorial incumbency have endeavored to reflect our beliefs and ideas through the editorial pages of this publication. The generous support that has been accorded to the *COURIER*

by the profession is very gratifying to us and is conclusive proof that we have correctly interpreted its desires and beliefs in this respect.

In our pages we have had no room for personalities and disputes between members of the profession or between medical journals, believing such occurrences to be unworthy of notice and certainly beneath the dignity of our publication to have them appear in our columns; moreover, we are of the opinion that unpleasantness is best when soonest ended and quickly forgotten. On the other hand, however, we have been ever ready to take up the cudgel and defend our profession against those of ill-designs toward it.

In our editorial pages we have aimed to give a dignified expression of opinion on topics of general medical interest, editorials which would reflect the opinion and the personality of the editor, and have avoided as far as possible the sometimes used plan of rehashing for our readers an abstract of someone's original article and passing it off for an editorial. We have done this once or possibly twice but it was owing to the shortness of time and stress of circumstances, and with this explanation we trust that the Lord and our readers will pardon those shortcomings. In the last few pages of the journal where the odds and ends are gathered under the head of "notes and items" we have indulged in an occasional pointed pleasantry and have been guilty of perpetrating a few poor jokes, despite of which our readers still suffer us to exist and in gratitude we return thanks.

Dr. John Zahorsky, of this city, who has been an associate editor with us in the past will succeed us as editor-in-chief. Dr. Zahorsky is a tireless worker, an excellent writer and will bring to the journal a ripened experience in editorial work. Under his successful management the COURIER will add to its laurels of the past and will attain to a broader field and a higher range of usefulness.

To our associate editors we owe a debt of gratitude, without them the success that has been attained would not have been possible. They were thorough in their work and ever ready and willing when needed. They were an ever-present help in time of trouble. We thank them. Vale.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of April 18, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. FRANK A. GLASGOW read a paper (see page 192 September issue) on the

Management of Laparotomy Cases.

DISCUSSION.

DR. CHAS. SHATTINGER had used the sulphate of magnesia hypodermatically. He found that in using 5-grain doses would result in one passage, but even this could not be relied upon with certainty.

DR. A. H. MEISENBACH said that one of the draw-backs to operative work was the after-care of the patient by one unaccustomed to operative work. The after-treatment is often of as great import as the operation itself as far as the patient is concerned. The more thorough the preparation the better for the patient. In emergency surgical work a careful preparation of the patient is often prevented by the urgency of the case, both as regards the gastro-intestinal tract and the external surface of the body. He thought, too, that many patients were over-prepared and often over-starved, as stated by the essayist. He did not favor the extensive purging and dieting for a week before the operation. If the patient is thoroughly cleansed out the day before the operation and the rectum thoroughly emptied the morning of the operation, he thought all conditions had been fulfilled. Patients recover when operated upon in emergency and when all the usual precautions of aseptic work have not been thoroughly carried out. He mentioned an instance in which he believed that he had lost the patient through starvation. He thought, too, that scrubbing of the abdomen could be overdone. His method of preparation of the patient is to give a full bath, preferably warm, in the morning. The

pubes are then shaved and the abdomen thoroughly scrubbed, then a pack of soft soap or bichloride; then when the patient is on the table, going over again with bichloride and lastly with alcohol. The use of turpentine he considered beneficial. It not only is an antiseptic but forms a coating on the skin such as had been described. Lawson-Tate had brought this practice into prominence. He applied alcohol not only to the abdomen of the patient but also to his own hands, especially the finger nails. The remark made by Keen was very striking when he said that surgeons when they had nothing else to do should rub their hands with alcohol, using gauze saturated with the alcohol. He did not use rubber gloves and had heard with astonishment a statement made by a surgeon that he used rubber gloves, but cut out thumb and finger so as to have the tactile touch. The speaker thought this destroyed any value the rubber glove might otherwise have. When operating on a pus case and having a sterile case immediately following he thought the rubber glove might be of value, though even this is unnecessary if the statement of the Scotch surgeon, Cheyne, is true, that he can go out of the operating room, cleanse his hands and do surgical work without infecting the patient. He thought it important that the surgeon should not allow clotted blood to dry on his fingers during the operation. To prevent this he had three or four basins with bichloride in one, distilled water in another and formol solution in another. The flushing of wounds with liquids he thought in advisable. Sponges dipped in a saline solution, wrung out, and then the fluids dipped up, was better. In regard to the sutures he had always been a great admirer of catgut and used it extensively with average success. Lately he had operated on several cases for radical cure of hernia and in three cases used catgut. Suppuration followed in every case. He used the chromicised catgut from sealed tubes and thought the suppuration due to the suture material because all precaution had been taken. During this time he operated on two cases in the country for strangulated hernia and used catgut. One of these patients died though the other recovered without incident. In the last few cases for hernia he had used silk prepared by boiling and the wounds healed by primary union.

DR. HENRY JACOBSON said that in high colon flushing ox gall was of advantage when there was a tendency to bowel obstruction, used with a Wales' bougie, which would not bend upon itself when it reached the sacrum. He did not think much nutritive effect could be

had from inunctions of milk, especially in adults. It is best to wear gauze on the head over the beard. When the surgeon is suffering from a cold he did not think he should operate.

DR. F. REDER said he was becoming skeptical about giving patients water after operations, especially since a patient operated upon lately had emptied a pitcher of water with no ill effects. He had been allowing his patients a little water, such as moistening the lips or tongue, or placing a moist cloth to the mouth, or even giving a half ounce every two or three hours.

In regard to the drainage of the abdominal cavity he believed the old method by the tube is still preferable when drainage is necessary and as the incision is in the median line, and Dr. Glasgow's method of introducing the drain is admirable. In a cavity where there is oozing it should be introduced in a way to check that oozing. The incision should be externally large enough to allow inspection of the wound so that the dressing can be carried down to the bottom.

The use of the ice bag is very grateful to patients and that together with the elevation of the bed give good results.

DR. SHATTINGER objected to the practice of a large number of surgeons in urging upon their patients the wearing of an abdominal bandage after operations for either a very long time, or, worse, for the rest of their lives. The usefulness of a proper support for a reasonable period after abdominal operation he thoroughly appreciated, but the continued use for a long period of time or through life he thought a grievous mistake. The abdominal muscles are undoubtedly weakened thereby, and the resultant relaxation predisposes to hernia. A muscle that is in normal condition and can carry out normal pressure against the abdominal contents shall be the best safeguard against hernia. Aside from any consideration of hernia, however, this long continued use of a support predisposes these patients to various malpositions of the abdominal viscera. He had had cases of gastropnoes, for instance, to treat, which, if not due to this advice on the part of the surgeon, were at least aggravated thereby.

DR. GLASGOW, in closing, said he objected to the use of formol on the hands for the reason that when there was blood on the hands it stained a dark brown. He said he should have mentioned one class of patients in his paper which was that of those addicted to the use of morphine. He thought it inadvisable to take away this stimulant from

the patient just before an operation. When they came to him under such circumstances he always kept them on their stimulant. The practice of giving morphine just before an operation he did not approve, unless the surgeon knew his patient's disposition toward the drug, as they frequently vomit for some time after its use. As to sponges, he thought they ought to be dry and used just out of the sterilizer. As to catgut, he thought it ought to be boiled in order to destroy the germs on the outside of the tube. The catgut in tubes may be sterilized while in the tubes but become infected when taken out. There is no trouble in boiling the catgut in tubes. He usually put the tubes in the sterilizer with the instruments. The tubes do not break and they are sterile when taken out. He always uses gauge covering on his head and he thought this ought to be extended down under the chin so as to catch the perspiration. In regard to wearing a bandage after the operation he agreed with Dr. Shattinger that much harm might follow the extended use of the support. He usually directed his patients to wear the support a year, but rarely longer than that. He objected to elastic bandages and did not use them.

*Meeting of May 16, 1901; Dr. Norvelle Wallace Sharp,
President, in the Chair.*

DR. R. B. H. GRADWOHL, read a paper (see page 269, this issue)
on the

Use of the Double-Knife in Histo-Pathology.

DISCUSSION.

DR. A. H. MEISENBACH said the instrument shown by the essayist was not new but a modification of the Valentine knife, though on a larger scale. Ten years ago he used the Valentine knife under instruction of Drs. Israel and Jurgens, in Virchow's laboratory and did the same work Dr. Gradwohl is doing now.

He hoped the younger members of the profession would use this means of diagnosis for it is very valuable especially in demonstrating the changes taking place in the tissues. The use of this knife in the operating room ought to be of value. It would, of course, necessitate the presences of someone qualified to use the microscope

because the surgeon generally has his hands full with the operation. The use of the instrument at an operation would be a means of indicating to what extent further operative work would be necessary.

DR. CHAS. SHATTINGER thought the instrument should be made the subject of class instruction. There is too much staining; too much artificial preparation in the college work by the students. The students fail to appreciate the appearance of tissues in their natural state, or the state which approaches the normal as nearly as possible in class work. He always, in his class work, laid great stress on using tissues as nearly as possible to their appearance in life. This does not receive a hearty response on the part of students. They like to see the tissues stained, losing sight of the fact that they are stocking their mind with artificialities. It is very necessary to get down to first principles in this kind of work and how better do so than to see the cells, not as we make them appear, but as they really are?

DR. GRADWOHL, in closing, in answer to questions, that this method had no special advantage over the freezing microtome except that it is much easier to handle and especially did this apply to its use in the autopsy room. The results would be the same in both cases.

DR. JOHN GREEN, JR., suggested that freezing might produce artifacts whereas the method described by Dr. Gradwohl was free from this objection.

DR. GRADWOHL said he had not met with that condition. The freezing would of course, subject the tissues to some change whereas the knife as shown cuts the tissue while it is fresh and unchanged, but whether artifacts would be produced by the freezing he could not say.

DR. A. H. MEISENBACH read a paper (see page 274, this issue) on the

Surgical Operations on the Aged.

DR. A. H. MEISENBACH presented a specimen of

Radical Cure For Hernia.

The patient was a man 64 year of age. He had been treated for hernia by the injection method by one of the hernia specialists in town, without result. The patient weighed about 260 pounds and the adipose tissue of the abdomen was three inches thick. On section it was found that all the anatomical landmarks had been obliterated; the

cord and superficial fascia and sac being one mass and the point which ought to have been attacked by the hernia specialist was avoided. This was probably due to the thickness of the abdominal walls and the specialist was not willing to thrust his needle to the proper point evidently fearing to go to deep. The adhesions about the cord were so great that it was determined to take away the cord, testicle and everything on that side. The specimen was brought to show what the pathological conditions were which gave rise to the hernia. The patient had been known to the essayist for the past twenty years. After going to the specialist for 22 months without relief he became disgusted and again wore his truss. In the light of our present knowledge in regard to hernias he thought if it was ever safe to guarantee a result, we might do so in a case of an uncomplicated hernia. Of course, he never guaranteed a result in any surgical operation, but this operation offered a better outlook than any other. The death rate is less than $\frac{9}{10}$ of 1 per cent and the recurrences less than 3 per cent.

The sac in this case is very adherent and thick on all sides. Silk was used in the deep sutures, and aluminum bronze wire in the skin. This was done because he believed they would have to remain much longer than is usual. He said he felt justified, too, in taking out the entire contents of scrotum on that side because of the massing of the organs and tissues. The vas was hypertrophied to the size of a goose quill.

DISCUSSION.

DR. H. JACOBSON asked Dr. Meisenbach if that old man had a stricture, which was answered in the negative. The speaker, continuing, said, even if he had no stricture he believed that, under the circumstances, the false passage would indicate an external urethrotomy combined with the usual Alexander operation suprapubic opening of bladder above, making a through and through drain because a false passage had been made probably with extravasation of urine as a result. If the false passage had not been made he would then have preferred the modified Alexander operation—having an assistant press the bladder down. He thought Dr. Meisenbach perfectly justified in leaving the catheter in as long as he did, though usually it is not necessary to allow it to remain that length of time. He took exception to the statement that the mortality was $\frac{9}{10}$ per cent in all cases. He

believed it should be about 8 per cent in old men with double large scrotal hernia, opening the sacs of these herniæ we find adhesions; they contain several feet of the colon and small intestines which are exceedingly difficult to reduce. The precautions of a warm room, stimulents and heat before and after the operation, etc., might reduce the mortality but he thought it much greater than $\frac{9}{10}$ per cent.

DR. F. REDER said this was undoubtedly a time when the operations enumerated by Dr. Meisenbach, was very dangerous procedure, not only in the old but in the young. This was in the pre-antiseptic period. He agreed with Dr. Meisenbach that there is no operation which cannot be performed on the aged as well as upon the young though in the former probably greater precaution must be used. One thing, however, that an aged person can not withstand well is suppurative processes.

When the organs are in a comparatively fair condition he thought almost any kind of an operation might be performed even if a cardiac lesion existed but which was not pronounced. With a renal lesion it is almost as dangerous in the young as in the in the old to perform any sort of operation requiring an anesthetic. Another condition of the aged which would make one hesitate to perform an operation is that of arcus senilis. His attention had been called to this and the outcome was verified by the death of the patient in several instances.

The operations enumerated by the essayist are all capital operations. Of the other operations, such as hernia, varicose veins, fistula and operations necessary for the relief of cancerous conditions, he thought no surgeon would hesitate in giving the patient relief. The difference might be called simply an echo of days gone by. The laity at that time were averse to an operation because they feared it would be immediately fatal and they were willing to bear the pain and live a little longer,

About six weeks ago he operated upon a lady nearly eighty years of age for intestinal obstruction. He talked to her rather heroically, telling her he would simply make an opening and allow the escape of the fecal matter. The operation was performed and the patient is now in good health gaining in weight, and feels very grateful.

The saying that a man is as old as he feels and a woman as old as she looks, has a bearing on operative cases. If the statistics were closely examined he believed it would be found that old men bear operative procedures more successfully than old women.

DR. MEISENBACH, in closing, said he agreed with Dr. Jacobson that an external urethrotomy is the operation indicated in these cases as a rule, but in this case it could not be well performed. A number of years ago he operated on a patient with torn and lacerated urethra in the membranous portion. The patient fell while walking over a joist and straddling the joist tore the urethra. He saw the patient two days after the accident. A country surgeon had attempted external urethrotomy but had only cut down through the perineum, not completing the operation. In this case he simply enlarged the opening already made and resected both ends of the urethra and also two thirds of the cavernous portion. A portion of the prepuce was taken and cut so that when the tissues contracted it would fit into this gap. The patient recovered.

One reason why he did not perform external urethrotomy on the patient mentioned in the paper was because he could not find the opening into the bladder—he hunted for this opening for half an hour.

He agreed with Dr. Jacobson that the percentage of recoveries is probably not as low as stated. These are not the class of cases fit for radical operation because we have the contraction of the abdominal cavity to contend with and the scrotum is filled with the contents of the abdominal cavity and there the peritoneal cavity is much contracted.

Dr. Reder's statement was correct in regard to suppuration in the old. Fortunately this case had the advantage of a perfect aseptic conditions. The operations we perform on young and old today would have been dangerous before the aseptic period. He had been astonished to see with what facility wounds heal in the aged. A case was related in the *Medical Record*, illustrating this. A surgeon resected the pylorus in a patient 72 years of age with complete success. Therefore he thought the position taken in his paper was justified; that age itself, providing there was good condition of the heart and kidneys and lungs, was no bar to operative interference. With grave lesions in any of these organs, however, operations of course become more or less dangerous.

DR. F. REDER read a paper (see page 280, this issue) on

Vesico-Vaginal Fistula.

DISCUSSION.

DR. HUGO EHRENFEST said he could find but little to say in addition to Dr. Reder's excellent paper. He had seen this operation performed by Schauta with perfect success. One question which might arise is, what would become of a myoma if developed in an uterus fixed in that position. So far as he knew that condition had never been observed.

Another operation, called kolpoplexis, not mentioned by the essayist had been advised for this condition, that in the enlarging of the fistula between the bladder and vagina end sewing up the latter so that the vagina becomes a part of the bladder. He had seen two cases operated upon in this way with perfect success.

DR. A. H. MEISENBACH said he had never had a case of vesico-vaginal fistula during all his experience. One method of operating not mentioned illustrated the efficiency of the Trendelenburg table. Trendelenburg operated on one case of high fistula by opening the bladder and stitching the fistula through that organ and then closing the bladder. The speaker did not see the operation but did see a hydrostatic test ten days after the operation, which proved the success of the operation.

DR. E. MARX said she had been unable to follow the details of the operation, but she thought it a serious matter to produce so marked a mal position of the uterus in a women not past the menopause. Could the fistula not have been closed by separating the bladder more thoroughly from its peritoneal connections; possibly through an abdominal? If this were not possible, it would certainly be preferable to do even this operation rather than allow the fistula to remain.

DR. R. C. HARRIS asked whether the Reed method as admitted by Charles Reed had been considered. In some respect this operation resembled that practiced by the essayist. Briefly it consisted of the following: Both margins of the fistula are split, then with a sharp pointed scissors curved on the flat, the vaginal mucosa is separated also the vesical, the former is folded outward and approximated and the latter inward and approximated. A curved needle with a handle specially made is then inserted just beneath the vaginal mucous mem-

brane dipping deeply into the cellular tissue and brought out just beneath the vesical mucosa, it is then crossed over and inserted beneath the vesical mucosa through the cellular tissue and brought out again just beneath the vaginal mucosa, it is then threaded with silk worm gut and withdrawn; other sutures are passed in the same manner, drawn together, the wound approximated and the sutures tied. The buried or hidden sutures may also be used in the manner advanced by Martin, of Berlin. Tsokna, of Athens, Greece, after closing the fistula with interrupted silk worm gut permits his patient to get up and go about shortly after the operation, claiming that the upright posture favors natural drainage of the bladder and tends to hold parts in state of proximation. Reed's method of treating this variety of fistula is illustrated very explicitly in his new work on gynecology.

DR. REDER, in closing, said he had attended a medical congress in Berlin in 1891 and while there heard mentioned the operation alluded to by Dr. Ehrenfest. The technique was also described on a patient. However, the speaker thought the technique and subsequent treatment were so complicated that the operation would hardly do. It is one that would not be practiced to-day when there are other methods which were almost sure to give more positive results.

The objection to the Trendelenburg operation is the stitching of the mucosa. Why this objection should exist he could not say but it presents some complications. The surgeon does not resort to stitching the mucosa, preferring to come in contact with the freshened edges of the vagina of the wound. The secret for all operations for vesico-vaginal fistula is to have sufficient laxity of tissue to bring together the margins of the wound. A surgeon who does not exercise care in this matter tears off the edges and puts in his sutures but he can hardly bring them together and when he does so there is so much tension on the sutures that the operation is practically a failure. From the numerous operations performed on the case reported he had to deal with simply a hole, there was no available tissue that could be utilized in bringing the margins of this opening together. The operation described by Dr. Harris he thought well of, especially in allowing the freedom to the patient to walk about after the operation.

REPORTS ON PROGRESS

MEDICINE AND THERAPEUTICS.

Some Cases of Cancer Treated by the X-Ray.

Francis H. Williams, (*Boston Medical and Surgical Journal*, August 12, 1901) reports several cases of cancer of the face, some of which had been operated upon, with recurrence, which were markedly benefited by exposure to the x-ray for a few minutes two or three times a week.

After a few treatments the ulceration present ceased to extend, and cicatrization began. It is still too early to say what tendency there is for the process to be renewed on cessation of treatment.

Infantile Atrophy.

John Lovett Morse (*Medical News*, September 14, 1901) applies this term to a morbid condition of infancy in which there is extreme atrophy of the soft tissues, without any demonstrable organic lesion to account for the same. Accordingly we must assume that it is the expression of continuous insufficient absorption and assimilation, rather than to defective digestion. It is most frequently observed during the first six months and is rare after the first year. Its development is favored by unsuitable food and bad surroundings. It may follow digestive disturbances, but as in typical cases the digestive processes are normal some other factor must be present.

The anatomical findings furnish little information. All the tissues are dry and subcutaneous fat is almost entirely wanting. The heart, liver and kidneys are usually fatty. There is marked atrophy of the muscles and mucous and submucous coats of the intestines. The lungs often show areas of atelectasis, and a complicating bronchitis or broncho-pneumonia may be present. In the intestines, complicating catarrhal lesions may exist.

Aside from the loss of, or failure to gain weight, there are in the early stages no very characteristic symptoms. In advanced cases the fontanelles are small and sunken, the bones of the skull overlap,

the face is pinched and skin wrinkled. Infections of the skin and mucous membranes readily occur. In general, the condition is one of extreme debility.

The conditions with which it is most apt to be confounded, and from which it must be distinguished are starvation, functional or organic diseases of the gastro-intestinal tract, syphilis and tuberculosis.

The prognosis is grave. Most cases terminate fatally, either from exhaustion or a complicating infection.

The treatment is mainly hygienic and dietetic. The best food is milk containing a low percentage of fat and moderately high percentage of sugar and proteids. Fats are especially difficult of assimilation and consequently cod-liver oil is rather injurious than beneficial.

Granular Degeneration of the Erythrocytes.

C. Y. White and Wm. Pepper (*American Journal Medical Sciences*, September, 1901) call attention in this article to a granular degeneration of the red blood-cells occurring in consequence of lead poisoning, and also as a result of exposure to heat.

The condition is not apparent in either the fresh or dried specimens until developed by staining, when the cells are seen to be dotted with numerous granules, taking a different stain from the cell body. They are developed by various aniline dyes, eosin-haematoxylin giving good results.

The blood of 21 workers in lead who had no subjective symptoms was examined, and all specimens showed the presence of granular degeneration of the red corpuscles.

The same condition may be experimentally produced in the blood of animals and may also be demonstrated in the erythrocytes and erythroblasts of the bone marrow.

A Case of Circular Insanity, with Observations on the So-called "Circular Neurasthenia."

S. H. Schreiber (*Archiv Psych. und Nervenkrank*, Band 34, Heft 1) after discussing a case of circular insanity adverts to the so called "circular neurasthenia," as described by Sollier. In this condition the patient has good days and bad days. On the good days he is cheerful, elated, make plans, etc. On bad days he feels dull, drowsy, mentally and physically depressed.

The course of the disorder is progressive, frequently to marked impairment of the higher intellectual faculties.

Now the accepted symptom complex of neurasthenia comprises:

1. Emotional anomalies (morbid irritability).
2. Abnormal occurrence of the fatigue sensation on mental or physical exertion.
3. Hyperaesthesia and hyperalgesia, central and peripheral.
4. Pains (topalgias) and paraesthesias.
5. Insomnia.

Ephoria is not a recognized symptom.

As regards the intellectual faculties, inhibition of thought resulting from rapid fading of conceptions may be present to such an extent that association of ideas may be temporarily completely suspended.

We find no reference to a form of neurasthenia in which there is increased intellectual capacity, heightened muscular energy, etc. Consequently the author is of the opinion that the so-called "circular neurasthenia" is a mild form or formes frustes of circular insanity, especially as Sollier describes his cases as progressive and incurable, and eventuating in permanent impairment of the higher intellectual faculties.

No doubt neurasthenic symptoms may be present in this as in other psychoses.

Gonorrheal Multiple Neuritis.

Prof. F. Raymond (*Le Progres Medical*, July 17, 1901) describes a case of multiple neuritis, with double facial palsy, apparently of gonorrheal origin.

HOGÉ.

NEUROLOGY.

Traumatic Hysteria; Cranial Operation; Recovery.

Frank R. Fry (*Philadelphia Medical Journal*, August 31, 1901) reports his observations of a healthy girl without previous hysterical symptoms who developed attacks of the grand type after having bumped her bare head violently against that of one of her school-mates. An almost continuous headache with lassitude, physical and mental, began soon after the accident.

No depression at the point of impact was discovered, but after

exhausting other efforts at relief a bone flap two and a half inches by two and a half inches was raised at the point said to be the place struck. The dura was found adherent to the pia arachnoid for some distance in all directions from the opening. The adhesions were broken up.

Recover from operative procedure was followed by complete recovery from all hysterical phenomena.

Fry discusses a similar case of Dr. C. B. Burr in connection with his own and asked the question: "Was the case scientifically operable?" He concludes that it was not. Operation was undertaken to give the patient the benefit of the doubt as to the presence of adhesions at the site which was a hysterogenic point.

A Clinical Classification of Insanity.

F. X. Dercum (*Journal of Mental and Nervous Diseases*, September, 1901) offers a classification based on clinical factors which he believes of use in grasping a comprehensive and co-ordinate view of the subject. Pathology has as yet so little to offer that a classification based on pathological data is not possible and may not be for a generation to come. A clinical interpretation admits every fact, near or remote, at our disposal. We approach the subject from all possible points of view—especially from a standpoint of practical medicine, beginning with delirium, the result of fever, or of alcohol, we are led to a study of the elemental forms of insanity. The deliria separate themselves into:

(a) Simple febrile delirium.

(b) Specific febrile delirium (Bell's delirium, delirium grave, typhomania, acute delirious mania.

(c) Afebrile delirium.

Confusion and stupor may follow the deliria and should be reckoned closely related forms. The emotional state in these affections plays a secondary part.

Melancholia, mania and circular insanity are closely related and in Dr. Dercum's judgment constitute *one* affection distinguished by the great factor of heredity, the dominance of the emotional state, wave-like course, its relative lucidity and tendency to recurrence.

Paranoia, the neurasthenic insanities and dementia constitute a degenerative class allied to the preceding. We then have:

1. Delirium, confusion, stupor.

2. Melancholia, mania, circular insanity (melancholia-mania).
3. Paranoia.
4. Neurasthenic insanities.
5. Dementia.

The relation of insanities to epochs in life is next considered. A tendency to delirium more than to confusion and stupor is dominant in infancy, while at and after puberty we may have both. The insanities of puberty may be included under the head of precocious dementias—(1) Hebephrenia, (2) Catatonia, (3) Dementia paranoides. In early adult life we have especially the mania-melancholia syndrone. In mature adult life we reach the period of paranoia; in old age of senile dementia.

The relation of insanity to infectious diseases, the intoxications, the diatheses, the diseases of the nervous system, and to pregnancy, puerperism and lactation are then taken up and classified under the confusion, delirium, stupor, dementia group. The melancholia-mania syndrone bears no relation to this group and is related to definite periods of life.

BLISS.

OPHTHALMOLOGY.

Treatment of Heterophoria.

At the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., Dr. George M. Gould read a paper on the Non-surgical Treatment of Heterophoria, and Dr. G. C. Savage one on its Surgical Treatment.

Dr. Gould concludes, from experience in private practice, that there is no surgical treatment, properly speaking, of heterophoria. For six years he has observed no case of heterophoria requiring operation, and that he has obtained satisfactory results when the cases were treated with common sense instead of with the scissors. He believes that in heterophoria accurate refraction, temporary but partial prismatic neutralization, supplemented by ocular gymnastics and the observance of ophthalmic hygiene constitute the proper treatment. He strongly advocates the non-surgical treatment of exophoria, as the following remarks will indicate:

"If words are not minced, then tendon cutting in exophoria is

positive malpractice. Surgery is the despair of medicine, and we should never adopt surgical methods while there is a glimmer of hope by natural means in the direction indicated by the subtle and adherent striving for normality." The other ocular insufficiencies were also discussed.

Dr. Savage believes that no operation should be done in cases of heterophoria intrinsic in character when gymnastic exercises, even if required for a long time, would give relief. The two objects in view in operating on eye muscles are the alteration of the muscular tension and the change of plane of action. The existence of a cyclophoria should be first excluded. In no variety of heterophoria should a complete tenotomy ever be performed. He describes the various operations for stheric and asthenic forms of heterophoria, with their various complications.

Remarks on the Use of Pilocarpine in the Treatment of Inflammations of the Interior of the Eye.

Howard F. Hansell (*Therapeutic Gazette*, August 15, 1901) as the result of an extensive experience, is a firm believer in the efficacy of profuse sweating (produced by hot baths and hypodermic injections of pilocarpine mur.) in diseases of the sclera, choroid and retina. The patients that derive the most benefit from this treatment are those suffering from rheumatism and gout. In syphilis he finds it a most valuable adjunct to the usual local and constitutional remedies.

His method is as follows:

"A convenient hour is chosen, usually 3 P. M., and the patient is put into a bath the temperature of which ranges between 106° and 110°F.; during the bath he drinks a cup of hot tea. After twenty minutes' immersion he is put into bed and receives a hypodermic injection of $\frac{1}{10}$ to $\frac{1}{8}$ grain pilocarpine muriate. The sweating begins in a few minutes, and is encouraged by hot bottles and blankets for two hours or more. Should the sweating become slight or insignificant during these two hours, the patient is given a glass of ice water, when the glands of the skin take on renewed activity. At the termination of the sweating the wet blankets are removed, fresh bedclothing substituted, and the patient left quietly in bed until the next morning when he is allowed to be up and dress until time for the next bath. Should he complain of exhaustion following the first bath, a hypodermic injection of $\frac{1}{10}$ grain strychnia is given one-half hour before the

next bath. The diet should consist largely of fluids. Whatever local eye treatment the disease calls for is of course administered as indicated and is not interfered with by the sweats."

Tuberculosis of the Choroid.

George Carpenter and Sydney Stephenson (*The Lancet*, July 20, 1901) gave the result of their study of 49 cases. They group them clinically as follows: (1) Acute miliary tuberculosis and tuberculous meningitis; (2) chronic tuberculosis; and (3) adolescent tuberculosis. The following conclusions are submitted; (1) Tubercle of the choroid may be met with in any form of tuberculosis. It is common in acute miliary tuberculosis and tuberculous meningitis (50 per cent of the cases examined). The lesion was usually small, solitary, and limited to one eye. (3) It is far more common in chronic tuberculosis than is generally supposed, it being present in 92.4 per cent of the cases examined. The lesion may be single or multiple. In very rare instances it attains great dimensions, and may perforate the eyeball. (4) It is present in a certain number of cases of quiescent tuberculosis, generally taking the form of a large, more or less pigmented area, situated in or about the center of the fundus.

SHOEMAKER.

PEDIATRICS.

Suggestions on Infant Feeding.

Kerley (*Medical Record*, August 31, 1901) writes on the topic of infant feeding. There can be no formulæ for the various ages of infancy. Infants differ in powers of digestion. During the hot months the digestive capacity is lessened. The food should be weakened.

The social conditions; the financial and the mental conditions of the mother must be considered in adopting the food. In the very poor, condensed milk is given, yet it always causes more or less malnutrition. After the third day give a mixture of 1 fat, 0.4 proteid, 4.5 sugar; after the tenth day 1.5 fat, 0.7 proteid and 5 sugar; after the twenty-first day 2 fat, 0.8 proteid and 5 sugar. Increase the strength gradually. At six months give 3 to 3.5 fat, 1 to 1.5 proteid and 7 of sugar.

The most usual error is in beginning at birth with too strong a milk mixture.

By the admixture of cream, milk and sugar these percentages can be obtained at home. An intelligent mother or nurse can modify the milk under the physicians direction.

In summer pasteurization is necessary in the cities.

When proteids are not digested the milk may be peptonized or it may be mixed with cereals. Peptonization is not advocated. Dilution with a cereal decoction prevents bad coagula.

If the milk mixture is too strong the child loses his appetite.

Excess of fat causes colic and green stools or vomiting.

Proteid indigestion causes habitual colic.

There should be about twice as much sugar as fat and about two and one-half times as much fat as proteid.

In some cases of indigestion, give nothing but plain water or dextrinized cereal for twenty-four hours or more. Gradually milk is added to this mixture; a very small amount at first.

Cyclical Albuminaria.

Churchill (*Archives of Pediatrics*, September, 1901,) discusses the literature and reports a case. The patient was a girl aged 11 years. She had suffered from tonsillitis at intervals. Had measles, gastro-enteric disease several times. During an attack of tonsillitis albumin was found in the urine. This albuminuria persisted. It was invariably absent in the early morning, but appeared after the patient arose.

Eighty specimens of urine were examined during the course of several months.

The quantity of urine was fair. Average 722 cc. Kidneys performed their function.

Very high percentage of urine (4 to 7 per cent) occurred, but this was traceable to a certain cause. Tonsillitis, pleurisy, cervical adenitis and abscess of the gums caused great increase.

No particular relation between severe exercise and the excretion of albumin could be established. Urea and phosphates were in somewhat greater proportion in the highly albuminous urine. Sediment was increased during the stages of high albuminuria. Casts, blood, pus, renal epithelium and crystals of calcic oxalates were found, even in the non-albuminous urine, but greatly increased when the albumin percentage was high.

The origin of this nephritis must be traced to some of the infectious diseases from which patient suffered.

Probable Etiology of Rectal Polypi in Children.

Huber (*Archives of Pediatrics*, September, 1901,) discusses this subject. He quotes various authorities as to the etiology. After a study of the literature and some of his own cases he observed that rectal polypi were only found in patients who at the same time showed evidences of lymphoid hypertrophies in the naso-pharynx with other manifestations of the status lymphaticus.

The structure of rectal polypi also confirm this view since they are composed of lymphoid tissue. In cases of constitutio lymphaticus even when when no rectal polypi were present a hypertrophy of the lymphoid follicles in the large intestine have been found.

He concludes that it is fair to regard the rectal polypi under discussion as a local manifestation of the status lymphaticus.

ZAHORSKY.

New Surgeon-General of the Navy.—Dr. Presley M. Rixey, who has been the medical attendant of the family of our late Chief Executive, President McKinley, since the beginning of the Spanish-American war, is to be made Surgeon-General of the Navy at the expiration of the term of service of the present incumbant Surgeon-General Van Reypen which will be about the first of next year. Dr. Rixey was born in Culpepper, Va., in July, 1862, was graduated from the medical Department of the University of Virginia in 1873, and entered the Navy as assistant-surgeon in January, 1874. For the first three years he was on various vessels belonging to European, South American and home squadrons, but since 1887 he has been on special duty in Washington nearly all the time.

Prohibition of "Loop-the-Loop."—The authorities have very properly put a stop to what is known as the "loop-the-loop" at Coney Island, an "amusement" attraction in which a car dashes down a steep decline with such terrific speed as to cause it to pass upside down around a loop of track in the air. It has been frequently noted that women broke their corset strings in leaning forward in order to catch their breath as they swept down the incline, and it is now reported that a young man of Brooklyn has died from the bursting of a blood vessel in the liver caused by a ride in a "loop-the-loop" car.—*Boston Medical and Surgical Journal*.

BOOK REVIEWS.

Laryngeal Phthisis, or Consumption of the Throat. By RICHARD LAKE, F.R.C.S., Surgeon Laryngologist, North London Hospital for Consumption, etc. With Thirty-six Illustrations, Twenty-one of which are colored. Price \$2.00. [P. Blakiston's Son & Co., Philadelphia. 1901.

The author states that the importance of this subject and the immense value of a knowledge of its treatment induced him to prepare this small work. It contains 94 pages. The illustrations are very fine and must aid in the diagnosis of this important disease. The etiology is briefly discussed; very clear are his remarks on the diagnosis; the systemic treatment is dismissed with a few words.

In the treatment directed to the larynx itself lactic acid is given first place; the author also highly recommends formalin and protargol. Powders for insufflation are given less emphasis. Among those recommended are orthoform, aristol, iodol and iodoform.

Intratracheal injections are carefully considered. Operative treatment receives appropriate attention. In regard to prognosis the author lays emphasis on the point that primary cases of laryngeal tuberculosis are often curable. The pathology of the disease is very thoroughly described. A tabular list of the author's 329 cases is appended.

International Clinics, Volume II, Series 11, J. B. Lippincott & Co., Philadelphia.

In this, as in the previous volume, we find quite a number of valuable articles on various medical and surgical subjects by well-known authorities.

As of special interest may be mentioned:

Treatment of Atony of the Stomach and Colon, by Fenton B. Turck, Chicago.

Treatment of Puerperal Eclampsia, by Robert Jardine, Glasgow.

The Conservative Treatment of Appendicitis, by A. Broca, Paris.

Small pox, with Particular Reference to the Prevalent Epidemic, by J. F. Schamberg, Philadelphia.

Internal Hemorrhages, by Carstairs Douglas, Glasgow.

On the Mechanism of Mental Operations, by S. Ramon y Cajal, Madrid.

Movement Therapy for Locomotor Ataxia, by H. S. Frenkel, Heiden, Switzerland.

OBITUARY.

DR. ABRAHAM LITTON.

In the fullness of time and ripeness of years, on September 22, 1901, the final summons came to Dr. Abram Litton, of St. Louis. In this city, throughout this state and to the confines of the Mississippi Valley, are hundreds of men, many of them long since white-haired, who, with mixed veneration and tenderness, remember him as their old Professor of Chemistry. To them the news of his death will bring a sense of personal loss, for while he had maintained close relations with very few, all felt the richer for the thought that so noble a soul was still left on earth.

Dr. Abram Litton was born 87 years ago in Dublin, Ireland, and was brought to this country when only 3 years old. His father, Joseph W. Litton, settled in Nashville, where Abram received his education, graduating from the University of Nashville at the age of 17. He continued his studies at that institution for a year after graduation and then accepted a position as teacher in a small school at Paris, Tenn. While there he commenced the study of medicine. After two years in Paris he was offered the Chair of Mathematics and Natural Philosophy at Nashville University. In 1839 he visited Europe to pursue the study of chemistry. Returning to this country after three years, he accepted the Professorship of Chemistry at Washington University. In 1843 he married and erected his home on Eugenia street, in which he continued to live until his death, that is, for 58 years. That same year he was made Professor of Chemistry in the St. Louis Medical College, which had then been a year in existence as the Medical Department of St. Louis University. This position he held just half a century. Rosy-faced boys who heard their first lectures from him grew to be gray haired leaders of their profession, and finally retired as the burden of years accumulated, while their grandsons sat at the feet of the same old master. In 1849 he served as Superintendent of Public Schools. Dr. Litton received an honorary degree of Doctor of Medicine from the St. Louis Medical College in 1849, but never engaged in practice.

His wife and two sons, Dr. Charles Litton, and Joseph Litton, attorney, died years ago. A daughter, Miss Alice Litton, survives him.

Dr. Litton was perhaps the last in this city of the old type of scientific man. The modern man of science is eminently a specialist. He chooses some little corner of the garden of knowledge; delves at it early and late, and rare and precious are the fruits which reward his labors. The system is the best for the progress of science, but there is a danger that the man himself may become somewhat atrophied and one-sided. Only a generation ago there were bred men both deep and broad; men who while arduously mastering the details of a special subject, yet had time, energy and inclination left to maintain a sympathetic and intelligent interest in work done in the broad fields stretching beyond their domain. We, of to day, know that the apples are reddening on many a tree of knowledge in orchards spreading far beyond the hills which shut in our little valley. We would like to wander off, to see and taste but alas, our little patch must be weeded and watered, and we accept the inevitable, knowing that if we do *our* work well, we will have done all we can. Nevertheless, we look back with admiration, not unmixed with a little envy, on the giants born in days less strenuous.

To these belonged him whose memory we celebrate. A master of his art; deeply enamored of its mysteries, he at the same time kept constantly informed of its out-lying branches and on a wide variety of those subjects which appeal to the enquiring mind. One of the best teachers it has ever been the writer's fortune to sit under, he took pleasure in devoting extra time to enriching our young minds with the knowledge of matters more or less cognate to chemistry or physical science. For years his Saturday evening lectures, at the St. Louis Medical College, illustrated with stereopticon views, and demonstrations of the laws of light, heat, etc., were a delight to those who attended them; and that he himself keenly enjoyed them was apparent. He felt that he was doing a good work, and doing it well. He was actuated by the hope of inciting in some of his hearers a love of science like to his own. The writer can never forget the last words he heard him utter on the rostrum, spoken in simple and homely phrase: "Now that you have finished your course here, as most of you will never see me again, let me *beg* of you, please, (with rising, pleading

emphasis) *please, don't* at once go and forget it all, but while you prescribe pills and set broken bones, *do try* and once in a long while give a *little* thought to scientific matters, and *do try* to get a *little* knowledge of subjects beyond the routine of practice."

In appearance Doctor Litton was a typical professor. Not the professor of to-day, carefully groomed, and for the most part indistinguishable from a well-to-do business man; but the professor of an earlier day; the professor of the stage and novel. Tall and spare, ascetic of countenance, with the students stoop and somewhat abstracted gaze indicative of habitual profound thought, his dress severe and of academic cut, he seemed made up of pure mentality. The favored few who knew him well, however, learned that a kind heart beat under the austere exterior, which was revealed to the observant by his patience with those slow to learn, by his genuine interest in all and by an infrequent but thoroughly genial smile.

A bright intellect, a strong will and a warm human heart have gone from us, the memory of which will linger with all who came under their influence while life lasts.

GRINDON.

Estate of Dr. E. S. Lemoine.—The lack of business methods and judgement in the management of his financial affairs on the part of the average physician, is so well known that the exception to the rule when it occurs, is worthy of notice. The late Dr. E. S. Lemoine who was an honored member of the profession in this city, combined rare business sense with his excellent professional attainments, and as a result left an estate of unusual size for a physician. Its inventory, as recently filed in the probate court, showed the following items. Notes and interest, \$2,227.96; accounts, \$31,556.41; stocks, \$125,638; cash, \$21,830.21, a total of \$181,252.58. The cash value of the amount of his outstanding professional accounts will doubtless be considerably below the figures given but notwithstanding this fact he leaves an estate of comfortable proportions particularly for a physician.

NOTES AND ITEMS.

Cannot Revoke License When Granted.—The Kentucky Court of Appeals has rendered a decision that the State Board of Health has not the right to revoke a license to practice medicine when once it has been granted.

The Antiquity of the Vaginal Speculum.—The *Philadelphia Medical Journal* says that it is plain from the Babylonian Talmud, ("Traite Nidda," pages 17b and 66a) that the ancient Hebrews used the speculum to determine whether or not hemorrhage from the vulva came from the uterus. This is noted by Dr. Schapiro, in *La Provence Medicale*.

Italy Opposes Foreign Practitioners.—The British government extended reciprocity of recognition of medical qualifications to the kingdom of Italy last March, as stated by the *British Medical Journal*; *Journal American Medical Association*, but the Italian practitioners are doing their utmost to prevent outside physicians from attending even the foreign tourists. They contend that whatever custom that exists in favor of those holding foreign diplomas was in vogue before the unification of the kingdom and does not hold good now. Recently a graduate of Berne University and clinical assistant to Professor Kocher passed the required final examination in medicine in the University of Pisa, but the faculty, assisted by the Ordine die Medici, of Rome, have presented resolutions to the Minister of Public Instruction asking that no permission to practice be granted.

Longevity of the Various Races.—It has often been remarked that while nothing is so uncertain as the duration of any given human life, nothing is more certain than the aggregate of years which may be assigned to a group of one hundred persons or more at any particular age (*Philadelphia Medical Journal*). The expectation of life at a given age, to use the actuarial phrase, differs considerably, as might be expected, in different countries, and Englishmen may be sur-

prised to learn that they are not the longest living among the white races. At the age of 20 an Englishman in average health may expect to live forty two years, and any life office will grant him a policy based on that probability. The American's expectation is for a slightly longer period. On the other hand, a German lad of 20 can count upon little more than thirty-nine years and a half. It would seem, therefore, that the restlessness attributed to the American temperament does not necessarily conduce to the shortening of life, nor the composure of the German to its prolongation. Possibly the better feeding and clothing of Americans in the lower classes of the population is the principal cause of their greater longevity. Their position is, at any rate, maintained in later as well as in earlier years. The American who has reached 60 may look to complete fourteen years more, while the Britisher's expectation is only about thirteen years and ten months, and the German's as nearly as possible twelve months less. Both at 20 and at 60 the Frenchman's prospect is a little better than the German's and a little worse than the Englishmen's.

The Money Value of a Woman's Life.—Legal decisions tend to show that a woman's life is worth but half that of a man (*Philadelphia Medical Journal*). \$5,000 has often been decided upon as the value of a man's life, as many decisions of the courts show, while the judgements recently allowed in two separate States, for damages for the deaths of women, amounting to \$2,500 each. The Supreme Court of Maine reduced a judgement for \$3,500 to \$2,500, claiming that the former sum was too large to pay for the death of a woman who had only supported her husband and five children. The Supreme Court of New Jersey also reduced a verdict for \$5,000 for a woman's life lately to \$2,500. It is truly an odd view of life that is gained from the court room.

Suicide in Childhood.—It is a fact that suicide is continually increasing among the children of civilized people (*Philadelphia Medical Journal*). A hundred years ago it was an almost unheard of occurrence for a child to kill himself. Now, while suicides are commonly reported among the children of France, England, Italy, Switzerland and the United States, Germany heads the list in the number of juvenile suicides. In Prussia alone, from 1869 to 1898, 73 boys and 20 girls under the age of ten years, and 1175 boys and 342 girls between

the ages of ten and fifteen years, committed suicide. The younger children, in many cases, were totally ignorant of what they were doing. Of the causes for the prevalence of suicide in childhood, Baer, in a most interesting book just published in Germany, states that the most important are mental disturbances, such as the insanities and the emotions, love, hatred, jealousy, etc. In some cases alcohol was a distinct predisposing factor, while the tendency to commit suicide may be inherited. Poverty, hunger, fear, the early development of puberty, lack of education, etc., all lead to suicide. Baer lays especial stress upon society, balls, theatres, etc., which early awaken the sexual passions of growing children, especially to those about the age of puberty. A direct appeal is made to parents and physicians to help in the prevention of this growing evil among children, by a more careful attention to their education.

Boston Enforces Law Against Expectoration.—The City of Boston has decided to enforce the ordinance against the spitting nuisance. Fifty-six men were recently summoned to appear in the Charlestown District Court, charged with expectorating on the floors of elevated cars and stations. Only one of the men appeared. He was fined \$20, which he paid. In imposing sentence the judge said he intended to put a stop to the nuisance, and that he would probably hereafter impose the full penalty of \$100. Action has been taken against others. A similar action by the authorities in St. Louis would have a wholesome effect in lessening the habit here.

Arizona to Exclude Consumptives from It's Confines.—It is stated that Arizona will, at the next session of legislature, attempt to pass an act excluded those suffering from tuberculosis from its domains. Such a step would be unfortunate, and while every precaution should be taken to prevent the spread of the infection, it is highly probable the warmth and intensity of the sunlight and the absence of moisture in that climate will render the bacillus of tuberculosis harmless if it does not actually destroy it. Should such an act be passed it will bring to a realization of the fact that there exists at home many conditions for the successful treatment of this disease which at present are not recognized, for many that are sent to distant climates who would do well by living an out-door life in the country near their homes.

Title Refused by a German Physician. — When titles are conferred in Germany an assessment of a certain amount of money in proportion to the value of the title is imposed at the time that the title is conferred. As a title is supposed to confer a special distinction and is considered to be a handy thing to have around in emergencies they are eagerly sought after, and instances of their refusal, in Emperor William's domain, are as scarce as the proverbial hen teeth. Dr. Steffan, a German physician has had the temerity, however, to refuse the title of Sanitätsrath which had been offered to him, on account of the assessed fee of 300 marks. "Not a sou markee," he remarked for he was no mark. His action was a solar-plexus-hook on the credulity of its donors but which evidently had a beneficial effect for the official degree withdrawing the title states that the medical profession is called upon so often in matters of public health and has such responsibilities and obligations placed upon it in the matter of contagious diseases and the public health in general, that its members are quasi-public officials to a certain extent, and consequently, henceforth, no assessment will be made when a title is conferred upon a physician, as when it is conferred upon a private individual.

Chicago Alarmed.—According the Chicago *Tribune* of October 15, 1901, Health Commissioner Reynolds, of that city, has issued a proclamation calling attention to the unusual prevalence of typhoid fever in Chicago and warning the inhabitants against using the water from the hydrants without first filtering and boiling it. There has been an increase of 273 per cent in the number of cases of typhoid fever in the past six months over that of the previous like period. Owing to the pollution of the Illinois and Mississippi Rivers with Chicago sewage an increase in the number of cases of typhoid fever in Chicago is followed by a like effect in St. Louis, and as a result of the above condition the number of deaths from typhoid fever in the same period of time in St. Louis is double that of last year. Since the United States Government has diminished the rate of flow through the canal it is estimated that nearly one half of the sewage of Chicago flows back into Lake Michigan polluting the water at intake of their water works. In order to provide a sufficient amount of water flowing through the canal to carry off the sewage without creating a current dangerous to the shipping, the canal will have to be widened at an additional expense of \$30,000 000.

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ORIGINAL CONTRIBUTIONS.

**Retained Testicle; With the Surgical Features
and Microscopic Findings in
Three Cases.**

By WILLARD BARTLETT, M.D.,

ST. LOUIS, MO.

AS there exists a more or less general misuse of the terms which are applicable in describing this affliction, I may be pardoned for calling attention in my opening lines to the definitions of an undisputed authority. Prof. Koenig¹ reserves the name cryptorchism for double retention and refers on all occasions to a similar unilateral affection as monorchism, which I shall do in my treatment of the subject.

Retention is, as Kaufmann² puts it, very commonly seen in children, the late Prof. Gross³ having noted its occurrence in several members of the same family. It is one of the developmental errors which can by no means be regarded as peculiar to the human species, for Kuennemann⁴ recognizes its existence among horses, cattle, hogs, sheep and dogs.

The right side is said by DaCosta⁵ to be the more frequently affected in monorchism, but this statement is not supported by the statistic of Marshall⁶ who found, in examining

Read before the Medical Society of City Hospital Alumni, June 6, 1901.

10,800 men, cryptorchism once, left monorchism six times, and a like anomaly on the right side but five times.

Strange as it may seem, these apparently undesirable conditions have several times been simulated with various degrees of success; it being reported by Galin⁷ that a number of young Russians, in the desire to present a physical defect which will insure them exemption from military service, have pushed the testicle up into the inguinal region and by the use of irritating bandages and injections succeeded pretty well in keeping it there.

From the earliest times writers have attempted to explain retention by a congenital defect in the attachments of the gland or by some early inflammation of neighboring structures through the effect of which it became firmly adherent in what should have been merely a temporary resting place. It was not until recently that the idea was advanced by Finotti,⁸ as a result of extensive investigation, that cryptorchism and monorchism are the expression of mal-development of the organ itself; and in accordance with this teaching, a *normal* testicle is never stopped on the way to its usual destination.

CASE 1.—The patient is a strong manly fellow of 18, the subject of right monorchism, his retained gland lying just within the internal ring but having been, according to his account, at different times palpable beneath the skin. It now feels slightly smaller than its mate, the consistence is as usual in this organ, and the appearance of the cut section after excision differs in no way from the ordinary. The thick tunica albuginea is intimately connected with the parenchyma and the corpus Highmori bears the expected proportion to the rest of the testicle. Uncommonly heavy and irregular septa divide the section into lobules, and instead of growing more slender as they approach the periphery, some of these trabeculæ spread into fibrous patches of no regular outline, imbedded within which are a few scattering gland tubules. In many of the pyramidal compartments the interstitial element is decidedly increased over what is usually found in a healthy youth of eighteen; the tubules being widely separated in consequence. This anomalous connective tissues shows no recent embryonic cell collections, but consists of fine wavy fibers and few connective tissue cells. The normal trabeculæ present, on the other hand, fibers which are decidedly heavier, straighter and more easily stained.

The membrana propria surrounding a few of the tubules which are contiguous to these scars, is considerably thickened; with the rare exceptions mentioned, the tubuli contorti are possessed of fine basement membranes and their epithelium consists of several layers of

cells, each containing an oval nucleus with one nucleolus. As far as the shape and size of these epithelial elements are concerned, it is impossible to make any division into parietal, mother and daughter cells. Nuclear figures do not appear at all, but it must be added that the specimen was not fixed for a few hours after its removal. The usual granular mass fills most of the lumina, but I have been unable to find one complete spermatozoon. The tubuli recti contain the usual single layer of columnar cells but no villi can be made out, nor do spermatozoa appear in the lumina.

The groups of interstitial cells scattered here and there present nothing unusual, either as far as appearance or number are concerned.

CASE 2.—For the specimen here considered, I am indebted to Dr. M. B. Clopton. The imperfectly descended organ is from the right side of an individual of the virile class, 23 years old; it lay just outside the external ring, while its mate—as in my first case—was in the usual position.

The septa are, many of them, thickened to irregular masses of scar tissue toward the periphery, these being continuous with extensive patches of similar nature which lie well within the pyramids. The interstitium separating the individual tubules is also quite generally increased, there being many small areas of round-cell infiltration, an evidence of the fact that the process is, in so far at least, *recent and progressive*.

Of decided interest also is the condition of the convoluted tubules. Every membrana propria is distinctly thickened, some more so than others, and the diameter of the tubule is in every instance decreased in proportion to the amount of thickening. In some of these gland units, epithelium has been completely displaced and they now constitute, as the last stage of the change, mere fibrous cords. Others give a beautiful exposition of the fact that the infantile character has been retained. In most of these tubules however there is seen a multiple layer of epithelium, each cell possessed of a large round or oval nucleus with one nucleolus. The lumen is generally apparent and contains the usual granular mass, but nowhere are spermatozoa in evidence. Indeed this parynchyma presents none of the characteristics which are seen in healthy individuals of this man's age.

The tubulæ rectæ are of unusually small size, have their tunicae propriae thickened, retain their epithelium and show in their lumina a small amount of granular detritus.

Interstitial cells are seen in clusters situated in all parts of the specimen; appearing in somewhat greater proportion than in Case 1.

CASE 3. The organ from which this specimen was taken was kindly placed at my disposal by Dr. A. H. Meisenbach. It was a case

of cryptorchism, in a man of 35 of the virile type. His left testicle, which I examined, lay just within the inner inguinal ring.

My sections which I intended for transverse, show nothing of a trabecular arrangement, but the interstitium is the seat of changes which are in the highest degree remarkable. First and foremost is the universal increase in the number of interstitial cells; not only are there immense clusters of them in various parts of the specimen, but everywhere else are the individual tubules dissected apart by single rows.



SPECIMEN NO. 3.—Vasi Increase of Interstitial Cells.

The cells are of the most varying sizes and shape, no doubt as a result of the counter-pressure of one another. Some are degenerate as is evinced by the faulty staining qualities of their nuclei, while in a few fields are seen a number of Reinke's crystalloids, undoubtedly products of retrogressive metamorphoses in the interstitial cell.

The number and width of the stuffed capillaries which penetrate the masses of interstitial cells is truly wonderful. In some fields these channels gain cavernous proportions and entirely displace the cells, or at least divide large groups into numerous smaller ones.

On most of the tubules, evidences of pressure atrophy are apparent; a very few contain several rows of fairly well preserved epithelium and open lumina, but the greater number present almost any

other appearance that can be imagined. In some instances, but a few epithelial cells lie in confusion within a distorted *membrana propria*; in others, there is a single layer, the row from one side touching that of the other in the complete collapse of the tubule which has been introduced.

No distinction can be made between straight and convoluted tubules; the *membranæ propriæ* exhibit the greatest variety in the matter of thickness, while a number of the granular units have undergone complete hyaline transformation. The finer retrogressive changes which have attacked the epithelial elements, are evinced, in part at least, by the varying intensity with which the nuclei stain. It is hardly necessary to remark that spermatazoa are nowhere to be seen.

To recapitulate, these three specimens show that the anatomical picture in this condition, is by no means uniform. Case 1 deviates from the normal chiefly in that there is a *relatively* large amount of connective tissue, the presence of which is explained by the imperfect development of the glandular element which, in the healthy male of 18, has to a far greater extent displaced the same. In Case 2, there is an *absolute* connective tissue increase in addition to mal-development of the tubules; while Case 3 is the subject of intense interstitial cell growth, vascularization and pressure atrophy of epithelial structures.

For practical purposes we must, however, disregard anatomical differences to some extent, as the finer distinctions can not be made until the organ is examined microscopically. Among those who have devoted themselves to a minute study of these cases, Minervini and Rolando⁹ with one such, as well as Finotti¹⁰ with seven, found what Ribbert¹¹ refers to broadly as atrophy of the testicle, meaning a condition in which the tubules are insufficient and the connective tissue is increased. But this so-called atrophy is, according to Finotti,¹² not the result of retention; just the reverse, it, like the retention as previously mentioned, is to be traced back originally to mal-development of the organ.

The actual value of such organs to their possessors can be quite easily shown by the following. Spermatogenesis is always late and has in fact been very rarely observed at all, so the productive power is of little value for purposes of argument. But Smith,¹³ Minervini and Rolando,¹⁴ Pick,¹⁵ and Finotti¹⁶ have noted, as in my three cases, that these men though childless, are of the virile type and of unimpaired sexual po-

tence. The last two assertions can certainly not be made respecting men who were castrated while babies, so Finotti very logically concludes that the testicles, even though retained and atrophic, are responsible for the manly type and the sexual appetite as well as power. Can they then be considered and treated as useless, up to the time when a man has gained his majority? By no means.

Whatever their worth to the possessor, it can not be disputed that these abnormal glands constitute a source of serious danger as well. Orth¹⁷ makes the broad assertion that they are prone to become the seat of tumor formation, and it has been the experience of Koenig,¹⁸ Kocher¹⁹ and Tillmanns²⁰ that cancer is the form of growth most frequently met with. On the other hand Cuneo and Lecene²¹ assert that the organ in its normal position, is more likely to undergo carcinomatous degeneration, but that the retained organ more frequently gives rise to sarcoma, which is then directly traceable to the increase in interstitial cells, which is frequently seen in the gland whose descent has been impeded. These same cells are considered by Hansemann²² to be responsible for at least that form to which the name alveolar sarcoma, has been applied. Among the others who report the malignant connective tissue tumors complicating monorchism are Krompecher²³ Schmidt,²⁴ Riedel,²⁵ Kayser²⁶ and Kaber;²⁷ the last named writer having found that eighteen out of one hundred and fourteen glands thus affected, had never descended. Further reasons for the retained testicle becoming the subject of surgical treatment are that it induces incarceration, torsion, hydrocele, hernia, and hypochondria, as mentioned by Koenig,²⁸ Parona²⁹ and Ziebert.³⁰

There are in these cases two essentially different sets of operative indications, viz., those which arise from clinical symptoms of disease already present in the gland, and those which we deduce from considerations of a physiological and pathological nature. In regard to the first class, it must be apparent that no one should hesitate to remove organs, in either monorchism or cryptorchism, which threaten the patient's life or health in one of the ways above mentioned.

But with respect to the second class of indications, there is decidedly more room for argument; for example, when a perfectly quiescent retained testicle is encountered—in the course of a hernia or other inguinal operation—what shall be done

with it? Clearly, in monorchism, possible future danger is averted by excision, and the loss is compensated by the organ on the other side. But in disposing of a double retention, under similar circumstances, *the principal consideration must be of the patient's age.* As stated above the retained atrophic testicle has, in its influence on the development of the virile type, practically its only value. Consequently, if we disregard cosmetic considerations, a man above 21 is no loser, when one or both of the offending structures are excised; but on the other hand, he gains a priceless immunity from future dangers.

However, up to the time when development is complete, an effort must be made, in cryptorchism, to forcibly bring down one gland, at least, as has been done by Casati,²¹ Boyer²² and others, or spontaneous descent must be favored by a proper transposition of the tissues as Sargi²³ and Trombetta have proposed.

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Cocaine Spinal Anesthesia by Lumbar Puncture.

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THE first question to be decided is, have we any need for another method of anesthesia? While there remains the slightest mortality from any known method of anesthesia, it is our duty to endeavor to find a better and safer way.

We have unmistakable indications for using ether in some and chloroform in other cases. So we feel that in cases at least where the dangers are recognized as great from the administration of either of the above agents, we would hail with pleasure and gratitude the introduction of a safer method of securing relief from operation or other pain.

Like all new methods, the first announcement regarding cocaine spinal anesthesia were so startling and wholly without objectionable features, that the profession became almost hysterical regarding it and rushed into its use with too great haste, imperfect equipment for carrying it out, and little or no appreciation of the risks they incurred. The plan usually followed is that in the main perfected by Tuffier.

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The syringe must admit of sterilization throughout. Needle should be nine centimeters long, with internal diameter of $\frac{3}{10}$ millimeter, external diameter $1\frac{1}{10}$ millimeter. The point of the needle should have as short a bevel as possible, to still give a good point. A two per cent solution recently sterilized is used, or the pure crystals in hermetically sealed bulbs may be used by dissolving in boiled water; solutions can in this way be made fresh at any time, though the cocaine be ever so old. Cocaine solutions, however, will rapidly deteriorate, and as it will not stand boiling, the sterilization is a tedious and particular process. Tuffier, in preparing his solution, brought them for fifteen minutes to a temperature of 80° centigrade five or six times. The object is not to inject the solution against the outer surface of the dura, not into the cord, but within the dura mater below the cord and in contact with the cauda equina. As the cord terminates opposite the second lumbar vertebra, any injection below that point into the subdural space must be directly in contact with the cauda equina.

The patient should sit with the body bent well forward to give the maximum separation between the laminæ. There should be no deviation to right or left. The field of injection must be thoroughly asepticized and the iliac crests located at their highest points. The fourth lumbar vertebra is on a level with the highest points of the iliac crests and its spine should be accurately located. The needle should be introduced below and to the right of the tip of the spine one-half inch, and directed forward and toward the median line. The needle should be filled with sterile water, and the large end for connection with the syringe should be firmly closed by the thumb of the operator. The patient should be told not to move, that it will hurt just a little at first, but not more than the prick of a pin. The needle should be carried inward by steady pressure until a point of special resistance is passed, this is the ligamenta subflava and not the dura. The needle is carried forward very slowly until a second point of resistance is passed. Now the point of the needle is within the dura, and if the thumb is removed the spinal fluid will flow and continue drop by drop. The slight compressibility of water prevents blood from filling, coagulating and clogging the syringe needle and obviates the necessity for the larger canula arrangement for removing coagula, devised by Geo. R. Fowler.

The needle point being within the space occupied by the cauda equina, it should be so placed that its point shall separate and not cut or otherwise injure the nerves should it be passed more deeply than necessary. This is easily accomplished by keeping in mind the fact that a syringe needle is flattened entirely on one side for sharpening, and consequently has a sort of cutting edge which should be inserted so as to stand vertical to the long axis of the body. The syringe is connected by a slip joint with the needle, and its contents, not to exceed fifteen milligrammes of a two per cent solution, are slowly injected. The injection being completed, the needle is rapidly removed and the wound sealed with a sterile colodion dressing. If the injection has been properly made pain-anesthesia will be completed in four or ten minutes, and will permit of almost any operation being done below the diaphragm without pain. Strange as it may seem, sense of contact remains more or less intact throughout. In many cases the analgesia will extend to the thorax. This is due to the rapid dissemination of the cocaine throughout the spinal canal, and this is not influenced by the position of the patient. Not more than one-fourth to one-third of a grain should be used. The patient complains usually of epigastric weight, coldness, or great sense of weakness and desires to be fanned, presents an expression of anxiety and faintness with frequent vomiting. These accidents may follow immediately upon the injection or be delayed several hours. Vomiting is usually controlled by ice. Headache is frequent but not often severe, and disappears the first day. It may, however, be very severe and lasting. The principal danger seems to be that inherent in the drug itself. All are familiar with the alarming symptoms resulting occasionally from its hypodermic use in those who have an idiosyncrasy to the drug, which is not likely to be known until the trouble is on in all its force. Children and very nervous patients are considered bad subjects, but one very nervous woman in whom I used the method became reassured as soon as she found there was no pain from the operation, and did apparently as well as any such case could.

CASE I.—BILATERAL, CERVICAL AND COMPLETE PERINEAL LACERATION.

Mrs. H., aged 21 years, operated upon October 20, 1900. Fifteen minims of a two per cent solution was injected between the fourth

and the fifth lumbar vertebra. Nausea came on in eight minutes, complete analgesia in ten minutes. Pulse quickly rose to 124, respiration to 45; extreme pallor with great anxiety and precordial oppression followed almost immediately. One-twentieth of a grain of strychnine was given in twelve minutes. Operation lasted fifty minutes and consisted in cervical dilatation, curettement, double trachelorrhaphy and perineorrhaphy. Anxiety and oppression subsided, and during the latter half of the operation she talked and joked with the assistants and seemed to enjoy it rather than otherwise. She had slight headache for a couple of days, but was ready for her breakfast next morning, and made a better convalescence than I have ever had from a similar operation. No pain whatever was experienced from the operation at any stage.

CASE II.—COMPLETE FISTULA IN ANO.

Mrs. Florence D., aged 28 years, operated upon October 31, 1900. Eleven minims of a two per cent solution was injected as in previous case. The patient was hysterically nervous and fearfully frightened, but complete analgesia was obtained in eight minutes without pronounced pallor, anxiety or disturbance of respirations or pulse. Pain sense was abolished for forty-five minutes. Contact sense and ability to move the lower limbs were retained throughout. No difficulty whatever was experienced in making the injection in either case. The second case was able to take nourishment without difficulty or loss of a single meal save the one before operation. These patients were both operated upon at my regular clinic, and the result was so satisfactory that the temptation was great to continue it. Having, however, demonstrated the method to the class I was satisfied to leave good enough alone and return to the old methods. Symptoms of cocaine poisoning were far too pronounced in my own case to make the operator feel perfectly comfortable, despite the assurances of the enthusiasts regarding the method that there is no danger if the pulse does not reach 150 and respiration 50. Should such manifestations occur in my chloroform or ether cases I would consider that my patient was on the border-land of the great beyond and would have the anesthetic withdrawn. But how can we stop the anesthesia if we have obtained it by spinal injection? The fact is, we are in for it, and our hands are almost tied. Strychnine may be of some benefit, but it can do but little for paralysed respiratory centers and to restore the function of the pneumogastric in time.

No aseptic precaution can be avoided in these cases for lumbar puncture, even in skilled hands, can not be said to be entirely free from danger. I am convinced that in many of the cases doses much too large have been used. One-sixth of

a grain will be enough in many cases, and no more should be injected until it is determined whether the dose is sufficient. If the needle be left in position, this can readily be increased as needed to procure the desired effect. I hope that this method of anesthesia shall not be used by the general practitioner for surgical or obstetric work until many more of the dangers and uncertainty regarding it shall have been eliminated by a less poisonous agent than cocaine in its present state. Its advocacy for obstetric work in some quarters is certainly premature, for chloroform, given not to profound anesthesia, but enough "to smooth the deepest furrows in the knitted brow of agony" has always seemed to me to leave almost nothing to be desired. At least, in several hundred cases I have not seen a single unpleasant symptom from chloroform thus administered.

Among the unpleasant features noted in cocaine cases is vomiting in over one-half, great pallor in almost all where one-third of a grain is given, cyanosis, profuse perspiration due to paralysis, probably, of the sympathetic, rise of temperature in many, two, three, or even four degrees, apparently not attributable to the operation as a cause. This is declared by some enthusiasts to be of no consequence, as it is due only to spinal irritation, headache, rigidity of the muscles of the back of the neck, failure of anesthesia in some, involuntary stools, great fear in many cases, great depression from witnessing the operation and preparations, death from respiratory paralysis, or secondarily from hypostatic congestion of the lungs, from paresis of pneumogastric and heart. Tuffier reports five deaths in a series of one hundred twenty-five operations under cocaine. This seems a little high under ordinary conditions with chloroform or ether, but he says that all are excluded from cocaine as a factor, though one never regained consciousness, died cyanosed, and post-mortem revealed hypostatic congestion of the lungs and a cardiac lesion, yet it is asserted that cardiac lesions are not a bar or contraindication to its use. A chill often occurs. "Goilav reports a case in a man, aged 67 years whose leg he amputated under spinal anesthesia. Cocaine injected was $1\frac{1}{2}$ cg. of a one per cent solution, the operation lasting forty minutes. Two hours after the operation the patient had a chill, temperature went up to 38° centigrade, pulse became weak and frequent, 102; temperature later rose to 39° centigrade, pulse 125; throat, tongue

and lips were dry. The patient finally became delirious and died in coma twenty hours after the operation. Perspiration and urine were much diminished after the operation. The author states that he has employed spinal cocaine anesthesia in two cases; in one there was the fatal result just described, while the other showed all the symptoms of previous cocaine intoxication, but recovered. In conclusion it may be said that if those cases of obliterating endarteritis complicated by endocarditis with thickening of the valves, the employment of injections of cocaine is not only dangerous, but in some cases it may directly cause the fatal result."

In the face of these facts, I can not as yet be convinced that it should supersede chloroform or ether, with a mortality of one to three thousand or six thousand in skilled hands, for general anesthetic purposes. I feel that a pulse of one hundred and fifty is extremely dangerous, and that a temperature rise of 2°F. to 4°F. is, or may be, a serious complication, especially in an already grave case. I am always uneasy when my patient becomes cyanotic, if the pulse goes over one hundred and twenty and is almost imperceptible. In fact, I have rarely had the pulse reach one hundred and twenty, except when ligating the broad ligament, pedicle of the kidney, or in operations done upon patients in extremis.

I believe spinal injection will be an important method of producing anesthesia, but am by no means sure that cocaine will be the substance best to use. It is certain that as yet we know of nothing better; and until we do, or are assured by its use in many thousand of cases that it is as safe as chloroform or ether, its use should be restricted to cases manifestly unsuited for the use of chloroform or ether. We can not attach less importance at times to unconsciousness than to analgesia. In my own cases I had no trouble whatever in making the injection or producing complete analgesia, and as the results were brilliant, and to the student fascinating; the class was greatly surprised that I did not use it almost to the exclusion of other methods.

In my work I used the ordinary steel needle with glass barrel and asbestos packing. Platinum needles are preferred by some, but seems to me too soft. Spinal syphilis or scoliosis of the vertebræ may render the operation impracticable or impossible.

The solution I used was the hermitically sealed cocaine

tubes. Each tube or bulb contains thirty minims of a two per cent solution pronounced sterile after careful bacteriological tests. I am convinced that doses much too large have been used, and that as good results may be obtained with one-half the amount in many cases. The general recognition of this as a fact will not however perfectly protect against any unknown idiosyncracies, but will be a long step in the direction of safety. At Murphy's clinic, in the Cook County Hospital, Chicago, I saw one complete failure, due presumably to the age of the solution. Chloroform was used in this case. As experienced an operator as Murphy has required as many as three attempts to enter the canal where no known deformity existed.

The Right-Sided Anatomical Tripod.

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THE perfection of the technique of surgery in general, and abdominal surgery more especially, has had a tendency, so to speak, to group symptoms so that diagnoses are made up to a certain limit. First, in a general way, then, by a process of fine elimination of symptoms, we arrive at a differential classification of them, according to anatomical, etiological and pathological bases.

It is with this object in view that I read this dissertation "The Right Sided Anatomical Tripod," meaning thereby, the common symptoms due to gall stones, kidney stones and appendicitis. I might go further, however, and add to the list gastralgia, and conditions referable to the pyloric end of the stomach, the right tube and ovary, and right sided intestinal obstruction due to intussusception. A lack of time, however, will prevent my discussing these latter conditions.

The symptoms of gall-stone colic are classically described by most writers, especially Osler, as consisting of sudden attacks of agonizing pain in the right hypochondriac region which radiates to the shoulder, and is very intense in the epigastric or lower thoracic region.

Osler also states that it is often associated with a rise in temperature. This, however, has not been my experience, unless long continued and accompanied by an ulcerative process, and when temperature does exist, I would strongly suspect the attack to be due to appendicitis rather than to gall-stones. The pain may be so intense that the patient rolls and screams with agony, and there is vomiting, profuse sweating, depression of the circulation. There is usually tenderness in the region of the liver, and the gall-bladder becomes palpable.

When the obstruction is in the common duct, and is prolonged, jaundice of necessity appears, but does not when confined to the cystic duct. It is a common experience for cholecystitis, perhaps due to an ascending gastro duodenitis, to bring on the characteristic symptoms of gall-stone colic. It is not, however, a very serious matter to make a mistake in the diagnosis of the two conditions, since repeated attacks of inflammation of the gall-bladder often lead to the formation of stones, long continued drainage of that sac by cholecystostomy being a safe and efficient form of treatment.

It is well, however, in all such cases to search carefully for stones in the common duct, since it is well known by all surgeons that the ball valve action of a stone in that duct may and often does, produce the characteristic symptoms of hepatic colic, and are curable only by operation.

The usual custom of examining fecal matter for stones after each attack is therefore useless, since the majority of all attacks are relieved, not by the stone having passed along the canal and out, but either by its having dropped back into its ampulla, to its former position in the common duct, or, if in the cystic duct, by its falling back into the bladder, after it has become sufficiently distended with its own secretions to open the duct widely, up to the stone, thus permitting it to resume its former position within the sac. Rupture of the sac followed by peritonitis and death occasionally occurs; one such case having come under my observation.

Vomiting of large quantities of bile immediately following the attack is another prominent symptom, since the enormous overflow of bile which has been suddenly released within the duodenum tends to flow backward into the stomach.

The medical treatment of gall-stones consists in the administration of opium, or other narcotics at the time of the attack, followed by large doses of oil (olive oil being preferred

by some) until free catharsis is produced; then keeping the patient for a considerable period of time upon phosphate of sodium, not with the hope of being able to dissolve or absorb the stone, but to so increase the biliary function of the liver so as to keep the bile thin, thus preventing the passing of stones, or perhaps, the formation of new ones.

The surgical treatment is too well described in all standard text-books on surgery for me to occupy your time with it. It is my belief, however, that a properly performed cholecystostomy gives the largest percentage of recoveries, and the least amount of risk.

It is well at this time to emphasize an important fact which has been recently brought out in this connection, namely, that patients who have suffered for a period of three months continuously with jaundice are poor subjects for surgery, and should not be operated. Two reasons are given for this opinion. First, that individuals suffering from yellow atrophy of the liver lack sufficient recuperative power to recover from the immediate effects of the operation, or, if they do, they die soon from the permanent changes that have taken place in that organ. Second, the liability to uncontrollable hemorrhage. If this simple rule is observed, it will tend to not only increase the confidence of the public in our surgical skill, but also to induce those who are in a curable condition to submit to operation before it is too late.

Renal colic.—The onset of renal colic may be just as sudden as the other condition just described. Here, however, the pain begins in the back and flank, radiating down to the testicle and inner side of the thigh, presenting but few, if any, intestinal symptoms, and except the attack be very severe and followed by profuse sweating with a sudden reactionary temperature, there will be no elevation. The symptoms which may always be expected are those referable to the bladder; namely, frequent and painful urination, often in large quantities due to sympathetic irritation of the kidney, and bloody urine.

The attacks are of long or short duration according to the size or shape of the stone or stones, and rarely terminate in anything but a slight soreness of the kidney which disappears in a short time. Hydronephrosis, pyonephrosis, or even supuration of the kidney substance itself occasionally occur.

The treatment consists in administration of large quantities of water, opium, hot applications, hot baths, and rest in

bed with the hips elevated. Should repeated attacks occur and the stone not be found either in the urine or bladder, a nephrotomy should be done, and the stone removed. Symptoms due to a retained stone in the bladder may simulate kidney colic, but in that event, the urine will most invariably be found to be alkaline; the microscope will also reveal bladder epithelium instead of ureteral or kidney epithelium.

Tuberculous, floating or movable kidney may bring on attacks simulating colic due to calculi. A cystoscopic examination of the bladder, however, with a careful examination of the urine and external palpation of the flank will enable you to differentiate between these conditions.

A condition, which was first described by Fenger, in which there is a valve formation of the calices of the kidney may also bring on attacks similar to the one just described. These are extremely difficult of diagnosis, and are often relieved by the nephrotomy which has been done for the removal of the stone.

Appendicitis.—The symptoms of appendicitis are sudden onset of pain, referred usually, however, not to the pit of the stomach, radiating upward, but at first to the region of the navel radiating therefrom in every direction. It is common to observe at this stage as much pain and tenderness in one portion of the abdominal cavity as another. There is invariably an elevation of temperature, tympanites is also much more marked, and vomiting, not of bile, but, if long continued more of the characteristic fecal matter, due to retro-peristaltic action of the intestines caused by the inflammatory paresis of the same.

Where the appendix is low in the pelvis, and the attack is severe, it may be palpated through the rectum, also pains shooting down the spermatic cord, and inner portion of the thigh will be complained of. This symptom, however, is not so pronounced as when caused by renal calculus. Seventy-five per cent of cases will present symptoms of intestinal obstruction, while the others will have diarrhea. It is a mistake to suppose that the tenderness which comes on a day or two later, which is largely circumscribed, must always be in that classical position, described as McBurney's point. The appendix has been discovered in almost every portion of the abdominal cavity, and it is a common occurrence to find it an inch or two higher or lower than that point. We must there-

fore be careful, and not fail to recognize the trouble simply because the pain is not where we would like to have it.

The circulatory system varies according to the severity and extent of the inflammation. If there is not too much exhaustion from violent pain and vomiting, the pulse will be full and rapid. If there is extreme exhaustion, it will of necessity, be rapid and weak. I have also observed on several occasions that the pulse was intermittent when the patient was extremely toxic from acute infection from a gangrenous or ruptured appendix.

In conclusion, I wish to again call attention to the following conditions: First, relative to the three distinct locations in which the pain begins; second, that except a reactionary temperature be observed, no elevation is expected at the beginning of the attack except in appendicitis; third, the tenderness on pressure corresponding with the different locations of the trouble; fourth, the different character of vomit. Most of the other symptoms outlined are sufficiently characteristic and not found in all the conditions discussed.

Some of the most eminent men have been known to make mistakes in the differential diagnosis of these three conditions but that can be explained largely from the fact that they do not see the cases at the onset of the trouble, and often do not have sufficient time to observe carefully all the symptoms.

A Case of Appendicitis With Some Unusual Features.

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I AM enabled to report the following case by the courtesy of Dr. H. C. Dalton, in whose practice it occurred and who has furnished me with most of the history.

B. T. M., a printer; family tubercular. Six years ago the patient had typhoid fever and made a fairly good recovery. One year later he had a cough and lost flesh. Tubercle bacilli were found in the spu-

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tum and he went to Colorado, where he remained two years and returned, apparently cured. He remained well until the present attack.

Dr. Dalton was called on the evening of November 19, 1899, and found him complaining of severe pain in the lower abdomen, more acute on the left side, but not distinctly located. The patient stated that he was compelled to pass urine frequently and that urination was exceedingly painful, the most severe pain being in the glans penis and much more acute toward the end of the urination. He had been suffering for several hours when Dr. Dalton first saw him, and that the pain in the head of penis was the first symptom noticed and this was soon followed by pain and cramping in the lower part of abdomen. The symptoms suggested a renal colic but examination of abdomen and of urine failed to throw any light upon it. At this time his temperature was 99°F and pulse 85. There was no distention of belly and no localized tenderness, but the whole lower abdomen was sensitive, especially on the left side.

He was given saline purgatives and cold applications and Dr. Dalton saw him several times in the next thirty-six hours. There was but little change in his condition except a slight but continuous increase in tenderness in the abdomen. On the morning of the 21st Dr. Dalton asked me to see him and the condition was then as follows:

Temperature 99.5°F., pulse 90. His temperature had not gone above 100.5°F. and his pulse had ranged from 85 to 100 during the attack. He still had rather frequent desire to void urine but pain upon urination was not now severe. The abdomen was slightly disturbed and was resonant upon percussion except a small area to left of the median line, about midway between the umbilicus and pubes, where there was comparative dullness. The right iliac region, especially, was noted as being free from dullness and distinctly less tender than the same region on the left side. The muscles of this region were distinctly less rigid than on the left side, though he did not bear pressure well on any portion of abdomen below the umbilicus. An indistinct "doughy" resistance was found on palpation in the region of the dullness mentioned above. Except for the gradual and slow increase in the area of tenderness and the appearance of the indistinct tumor the patient seemed to be in an excellent condition, but we both were convinced that there was serious trouble and renewed the recommendation that Dr. Dalton had already made, that the abdomen be opened. This was absolutely declined by the patient and his family, and the treatment continued as before.

I saw him again on the 22d and 23d and there was little appreciable change in his condition except that on the morning of the 22d, after several copious stools he expressed the belief that he was better; he was free from pain and felt well; his temperature was 99°F., pulse 90 and his expression vastly improved; but the pain returned with

greater severity in the afternoon and on the morning of the 24th his temperature was 101.5°F., his pulse 110, and his whole belly somewhat disturbed and quite tender, while his face had acquired the pinched, anxious and apprehensive expression which has been so aptly called the *facies abdominalis*. The tumor in the left side was now distinct and the patient evidently failing rapidly. Operation was now accepted by the patient and family with the distinct assurance that it was a last resort.

Operation by Dr. Dalton, assisted by Dr. Roland Hill and myself. Incision in median line opposite site of the tumor. Upon opening the abdomen, the inflamed and distended head of the colon presented; intestines were somewhat distended, vessels engorged, and the visible peritoneum inflamed and covered in many places by patches of adherent lymph, while a thin, foul pus oozed up between the coils of the small bowel. The tumor which had been felt on the left side consisted of several coils of inflamed bowel, matted together in a mass as large as a cocoanut. These were easily separated and in the midst of the mass was found a very long and much inflamed appendix, its perforated tip firmly adherent to the fundus of the bladder on the left side. A fecal concretion protruded from the perforation.

The appendix was ligated and removed, all adhesions separated and abdominal cavity washed out and a careful peritoneal tailet made. The most intense inflammation and the sole site of adhesions, was in the immediate neighborhood of the appendix. The pelvis was fairly well filled with pus and the whole peritoneum was more or less involved in the inflammatory process. Strips of iodoform gauze were carried in various directions between the coils of intestines and into the pelvis and flanks, and brought out at lower angle of wound. The patient bore the operation well and rallied nicely from its effects but died on second day from peritonitis.

The interest of this case, I think, is in the anomalous position of the head of the colon and appendix, and the consequent confusing clinical picture presented.

Early operation might have saved the patient, but was declined. If we could have made a positive diagnosis of appendicitis, no doubt they might have consented, but, though appendicitis was discussed among other conditions, no positive diagnosis of any sort was made nor do I think that it was possible to arrive at any definite conclusion. I shall not try to explain the malposition of the appendix but will say that after the removal of the appendix and separation of the adhesions the caput coli seemed to fall very naturally into its proper position in the right iliac fossa.

The whole progress of the disease was slow and insidious. At the operation it was apparent that perforation of the appendix and infection of the general cavity must have occurred in the early days of the attack, yet his condition remained good up to the morning of the operation.

The Requirements of Modern Surgery.

By J. H. CARSTENS, M.D.,

DETROIT, MICH.

IF you ask what is modern surgery, I would answer that it is the gospel of cleanliness, *that covers the ground*. Here the problem comes and the difficulties, and here our failures are manifested on account of the utter impossibility of absolutely preventing infection in every case.

The Patient.—First, The great point in connection with this is the individual to be operated upon.

We have minimized the chances of infection of the individual himself, so that as far as the patient himself is concerned, we are able to get him or her reasonably clean.

The Hospital.—Secondly, If the patient is clean you can not operate on him that way. The patient must be covered, kept warm in fact.

We insist on absolute sterilization of everything that the patient has on, of everything that is in the operating room, this includes tables, chairs, all the basins, bowls and everything that may be used.

Considering all these points about the requirements of modern surgery, anybody can readily see the utter impossibility of carrying out modern aseptic surgery in a private house.

Every surgeon understands that, what I want to call attention to, simply is that the highest and most perfect type of surgery (that is in the direction of the preliminary preparation of the patient, if that is necessary,) the technique, the rapidity of the operation, the lessened danger from shock and the most careful, judicious after-treatment of surgical cases can be better carried out in a well equipped hospital than they can in a private house.

The Surgeon.—The third great requirement of modern surgery is the surgeon himself. The question of individuality always comes to the front and the power of adaptation to environments of an individual is far greater than the power of environments to shape the course of a person. A patient in perfect health with the greater power of resistance, the most beautiful hospital, or the most perfectly arranged operating rooms, the well trained nurses, the alert assistant can not compensate for a *poor operator*.

When anesthesia was used and the patient was free from pain, slower and more careful operating was allowable, and, in the course of time, this tendency to slowness and deliberateness has crept into the ranks of surgery more and more. Every slow and slovenly physician who never did any mechanical work in his life, whose hands are like an elephant's foot, whose joints are as stiff as a thirty year old cow's, considers himself a surgeon, competent to practice surgery.

If anyone should hint to these people that they are not competent to practice surgery on account of lack of training, they feel very indignant and they say, "Why, you had to learn. You killed a lot of patients learning this."

Because we were obliged to do this in order to open the path for the future, in order to save life and lessen suffering for coming generations; that does not say that every Tom, Dick and Harry has to learn this over again, has to make those same mistakes we have made. We have made the mistakes and we have tried constantly to teach the rising generation of surgeons how to avoid the mistakes. I do not know of a surgeon in this country who has not constantly tried to show the young man, or the old, for that matter, who was trying to learn modern surgery, how to do it.

But this takes time and no one can become a modern surgeon by going to a post-graduate school and seeing a surgeon operate at a distance of fifty or a hundred feet. In order to become a modern surgeon he must work directly with some modern surgeon, *he must assist him, he must be with him day after day, month after month—yes, year after year, certainly not less than a year.* Then he will probably appreciate the difficulties of diagnosis, the difficulty of selecting the right kind of operation, the difficulty of picking out the propitious time and moment for each individual patient. Then he will pick up some of the fine points in technique, the minutia or reason why

doing one little thing or by not doing it bring success or failure in an operation. Providing also the aspiring surgeon has had the necessary preliminary training.

The man who has never done any mechanical work, or who was not raised on the farm, or who was not allowed to make a little sleigh or a base-ball bat when he was a boy, or who never worked around in the garden, or played ball or the piano, or who never made pills in a drug store, the man who never *developed a mechanical hand from his earliest childhood*, will never be a *good surgeon*. The man who simply studied all his life time and whose father was kind enough to buy him every thing from a wagon to a book, who was never taught to draw and to cultivate an artistic eye or develop the sense of symmetry and proportion, *that man will never be a surgeon*, it is not in the nature of things.

Finally you will ask me: Who could or should be a surgeon? In answer I will say that he must be a well educated physican, must have been a general practitioner and a good therapist. He must take up surgery early and gradually develop a surgical hand; he must be an assistant of a first-class surgeon for at least a year, where he will see hundreds of operations of various kinds. Such a man may be a good surgeon. He ought to be in some large town, say a county seat, and, as his surgical practice grows, he ought to give up absolutely general practice and devote himself to surgery and then his colleagues in the county would support him.

Hence the requirements of modern surgery are:

1. A patient brought to the highest state of resistance to microbic infection and made as clean as possible.
2. An operating room, preferable in a hospital, where every thing has been made thoroughly sterile. This includes anesthetizer, assistants and nurses.
3. A surgeon who has a mechanical hand and has received a thorough and long training.

Spaying of Cows as a Means of Procuring More and Better Milk.

By L. F. ABBOTT,

ST LOUIS, MO.

IN 1872 I engaged in the milk business in Boston, Mass., all of my milk being shipped into the city on cars, and, in common with other dealers, I did not see a cow from one year's end to another. In 1879 I had built up a large trade, supplying four hundred and fifty families. At this time I was forced to buy a cow to supply milk for an infant, or lose some good customers. In a short time this cow was nearly dry and I had to buy another. As I was then in the cow business I wished to know something about them. In the course of my inquiries I found an article copied from a French dairy work advocating the spaying of cows and giving some reasons for doing so. I took this matter up and upon careful investigation found the following to be the usual conditions under which milk is produced.

Starting with a fresh cow, there is a time when her milk is not considered fit for use, this time is variously estimated at from one to ten days. Commencing with about three weeks after coming in a cow is in a state of sexual heat, this occurs quite regularly every three weeks until she is with calf again. At such times her whole system is in a state of fever; she will not give nearly so much milk, often falling off one half, this usually effects three milkings. This milk will not keep sweet nearly so long as the milk at other times.

The "United States Agricultural Reports," 1863, page 390, Mr. Willard, in reply to an inquiry on this point, writes as follows: The milk of cows in heat does sometimes play queer pranks with cheese. I have had it occur in my own dairy when several cows were in heat at the same time. Milk at such times is feverish and akin to a mass of putridity, not infrequently a fetid or very offensive odor is emitted from the whey and curd if used for cheese making; such milk will no more produce solid curd than it will give health and nourish-

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ment to a calf when taken into the stomach, and what is dangerous to a calf should be carefully withheld from a delicate infant or person in feeble health. Such milk is unfit for dairy purposes as well as for direct use as food.

When the cow becomes pregnant these conditions cease, but we are now confronted with a new difficulty. It is generally conceded that the first sign of pregnancy in a woman, who is nursing a child, is that her milk disagrees with the child and she is compelled to wean it on that account; it is reasonable to suppose that like causes will produce the same effect in both the human and animal systems. In further support of this we have the testimony of dairymen who are making a high grade of butter and cheese, that milk produced by cows in this condition is unfit for their use, that after a time the bad conditions seem to wear away, but will return again some time before coming in fresh again, some cows being more effected by these conditions than others. There are some cows that will go dry four, and even five months before coming in fresh, while there are others that can not be dried at all. This remark is often made by the farmer: "This cow never goes dry, we have to milk her right up to the time of calving, but her milk is not fit for use and we throw it away."

The question here arises—how long has it been that the milk was wholly unfit for use, and how good was it for a time before that if affected by the first stages of pregnancy and wholly unfit for use in the last stages, at what time between has it not been more or less affected?

The State has a law, with a heavy penalty, against killing a cow for beef, I think, for sixty days before she is to come in fresh, as the meat is not considered fit for use. How much better is her milk, which is a direct issue of pregnancy?

We find another serious difficulty among dairy cows, and that is abortion, sometimes caused by accident but more likely to occur when cows are too highly fed; it sometimes seems to be an epidemic, going through the entire stable. A cow coming in in this way is a long time in getting right and even then will not give nearly so much milk as though she had gone her full time.

As a safeguard against these conditions I advocate the spaying of cows while fresh as a means of producing more and better milk. When I first commenced to seriously consider this subject I applied to veterinary surgeons and found

that they knew very little about it; I received all sorts of discouraging theories by people who usually ended in acknowledging that they knew nothing about it. The only reliable encouragement I received was from Honorable Josiah Quinsy, father of President Cleveland's Assistant Secretary of State, he informed me that about twenty years before he had some cows spayed that he kept no record of, but his recollection was that they gave a large quantity of milk for a long time, and that he was so favorably impressed that he thought of writing an article for publication on the subject.

My experiments were conducted under the direction and with the assistance of my family physician and personal friends who were doctors. I have found that this subject has never failed to interest physicians. The principal interest of physicians and consumers in this operation is that it removes from the system all of the disturbing elements incident to a cow coming in fresh; there being no other tax or drain upon the system the milk is always of the same pure and even quality, the product escapes the waste of material and energy, as well as risk and loss of time in bringing his cows in fresh again. As the cow has no other drain upon her system her entire energies are devoted to producing milk or growing fat. By selecting cows of a dairy temperament and properly feeding them, fully 50 per cent more milk can be had in a year than under the usual conditions, and when the cow has passed her age or season of usefulness as a milker, she will make better beef. It is a well-known fact that all animals, both male and female, deprived of their reproductive organs make better meat; why should they not make better milk?

The first question that is usually asked in regard to this operation is, will the cow give any milk afterwards? By this operation we remove the disturbing elements which cause her to go dry, and she becomes a constant milker.

It is not a dangerous operation in the hands of one who fully understands the technique, the risk is comparatively *nil*, and should not exceed one-quarter to one per cent.

In my first experience with this operation I decided to use ether. I employed a veterinary surgeon to administer the anesthetic and it took about four or five minutes to produce profound anesthesia—she was smothered, as the ether was given on a sponge. We opened her belly, however, for the experiment, and as she lay on her side I discovered that the intes-

DAY.	A.M.	P.M.	TOTAL	DAY.	A.M.	P.M.	TOTAL	DAY.	A.M.	P.M.	TOTAL
1	13.4	10.1	23.5	1	12	9.13	21.13	1	7.2	5.8	12.10
2	11.8	9.7	20.15	2	11.12	8.11	20.7	2	7.1	5.5	12.6
3	12.10	10.11	23.5	3	10	9.8	19.8	3	7	6.8	13.8
4	13	7	20	4	10	9.14	19.14	4	7.8	6.6	13.14
5	11.8	7.2	18.10	5	11.12	5.4	17	5	8	5.4	13.4
6	7	6.6	13.6	6	1.8	0	1.8	6	4.2	4.10	8.12
7	12.14	6.14	19.12	7	7.12	5	12.12	7	6.12	6.4	13
8	10.6	8.14	19.4	8	7.12	7.8	15.4	8	8.4	6.14	15.2
9	11.4	8.12	20	9	7.6	7.14	15.4	9	8.2	6.2	14.4
10	11.10	8.4	19.14	10	8.14	7.8	16.6	10	8.6	6.2	14.8
11	11.10	9.8	21.2	11	9.6	7.14	17.4	11	8.4	6	14.4
12	11.8	8.8	20	12	9.12	7.12	17.8	12	9	6.2	15.2
13	13.2	7.10	20.12	13	10.4	7	17.4	13	9	5.10	14.10
14	11	8.8	19.8	14	10.3	8.2	18.5	14	8.12	6.5	15.1
15	12.2	9.12	21.14	15	10.4	8.6	18.10	15	9.8	7.6	16.14

tines were crowded over on that side, therefore I performed the next operation with the animal standing. In this operation we cut a small artery in her side and she bled to death. This was not very encouraging to begin with—the two cows cost me \$95.00, so I decided to take cheaper stock for the next operations.

Dr. Chadwick, of Boston, was present when I attempted to operate on the next two cows. He feared the animals would bleed to death and thought we had better wait. I said no, if the animals should die it would be evident that the operation is a dangerous one, so I proceeded with the work. Both operations were successful. The next day the cows gave no milk. In two or three days, however, both returned to the usual quantity of milk, and in a month from the time of operation they were giving six quarts where only four had been obtained previously.

In this operation the cow must be firmly fixed so that she can not move and do herself or those about her harm. When so fixed a sharp-pointed knife is used to cut through the skin; this is done in the hollow between the back and the hip and at one cut. We then cut carefully through the fleshy parts, and this is where the most danger arises from hemorrhage. After getting into the cavity we reach in and find the ovaries, they are about the size of the end of the thumb, sometimes smaller. They are cut off with the thumb nail and drawn out, the side is then sewn up and the operation is completed. To one familiar with it, it is very simple. The cow gives a better quality of milk after the operation and she gives milk more constantly.

The accompanying table gives a fifteen day's record of three cows (in pounds and ounces of milk) after spaying, also the following average for three months:

First cow.—March, 20.7; April, 21.6; May, 25.7.

Second cow.—March, 24.9; April, 16.15; May, 27.4.

Third cow.—March, five day, 10.6; April, 17.6; May, 21.8.

LEADING ARTICLES.

PARAINFLUENZAL AFFECTIONS.

The new concept—parainfectious diseases—promises as much in the general conception of infectious diseases, as parasyphilis has to the knowledge of late luetic lesions. The development of this concept is only a matter of time. Even with the present knowledge, certain lesions are being recognized which are not a part of the original infectious process, but are secondary results from the pre existing intoxication. In nearly all the typical parainfectious disorders, a change in some parts of the nervous system has occurred, and consequently, certain trophic, motor, sensory, or psychic symptoms appear, sometimes long after the original infection has been eradicated.

One of such diseases is influenza ; many nervous disorders follow this disease which may appropriately be termed parainfluenzal affections. The most common of these is neurasthenia ; there is the same debility, and depression of spirits ; the transaction of any mental work is a painful task ; the power of attention is feeble, and memory is very uncertain ; the patient may be very drowsy, or, on the other hand, may be very sleepless.

Severe mental disturbances or psychoses may follow this infection ; many cases of melancholia and maniacal excitement have been traced to a previous attack of influenza.

Very interesting are the painful affections which occur sometimes weeks after the acute illness. Osler and others have traced several forms of rheumatoid arthritis to this disease ; there can be but little doubt that acute or subacute arthritis indistinguishable from articular rheumatism follows grip. Such a case came under our observation : The patient had an acute attack of influenza with angina ; the acute symptoms disappeared but the pharyngitis persisted for a long time ; Influenza bacilli were demonstrated in the throat. Several weeks after the acute attack the patient had a mild attack of rheumatism ; that is, polyarthritis attacking successively various joints.

Myositis, and painful irritation of the fascia covering muscles are

not infrequent sequelæ; these pains persist for a long time, frequently recur at intervals, and often resist all treatment.

Very alarming are the cardiac neuroses following influenza; precordial anxiety is the mildest form; severe pain over the heart coming in paroxysms, and accompanied by some dyspnea, palpitation, and anxiety, present a picture very much resembling stenocardia; these symptoms may recur and have been known to persist for a year or more.

Arterio sclerosis, and cerebral sclerosis have been ascribed to influenzal intoxication. There can be little doubt that chronic changes in the kidney have been thus produced. Chronic Bright's disease has been traced to this infection.

A rare affection is recurring desquamation of the skin; this may occur after each attack of the disease and persist for weeks.

While many of these disorders may be termed sequelæ, others appear so late after the initial attack, and are really secondary, differing entirely in course from the original disease, and not yielding to the same treatment—these are best designated parainfluenzal affections.

GLYCERIN INTOXICATION.

Glycerin is usually placed among the non-toxic chemicals; it is often perscribed in large doses internally, used in clysters and in various dermal applications, so that it is considered entirely innocuous. Beresford (*Lancet*, 1888) called attention to toxemic symptoms which may be suddenly produced by the ingestion of a large dose of glycerin; the experiments of Lebedeff and others, demonstrated that when glycerin is injected under the skin of rabbits, severe hemoglobinuria results; Pfannenstiel claimed that the hemoglobinuria was due to the glomerular nephritis.

These experiments have apparently been forgotten, judging by the extent in which it is used; it is recommended in large doses for constipation, it is employed by surgeons to suspend certain insoluble antiseptics and injected into wounds; it is used in intrauterine applications; and given in enormous quantities in clysters; recently, Fisher has even recommended its use in place of sugar to sweeten the milk of infants.

Really, judging from the literature on the subject, little danger

might be apprehended ; yet, in the last two years two severe cases of hemoglobinuria have come under our notice ; these were caused by the injection of an iodoform emulsion in several ounces of glycerin into tuberculous abscess cavities. The first case was a psoas abscess from Pott's disease ; severe symptoms of shock, severe pallor followed, what was really not such a severe operation ; the urine contained hemoglobin and blood corpuscles in large quantity ; it was thought, at first, that the bladder or ureter were injured, but such was probably not the case. The second case was very much the same. The patient seemed at the point of death for about twelve hours, the severe symptoms coming on very soon after the operation ; here, also, marked hematuria was found. Fuchsinger has asserted that the urine contains only the coloring matter of the blood in glycerin poisoning ; but in both of these cases blood corpuscles were found.

We have seen severe symptoms induced by a large enema of glycerin and water ; after an operation, particularly, does glycerin seem dangerous ; it should not be used in a fresh wound, or in the uterus when recently curetted. Even in its external use, the dose should not be excessive ; as a laxative other less dangerous drugs should be preferred, although no doubt the intestinal tract can safely cope with a large dose when in a healthy state.

HEREDITY AS A FACTOR IN THE CAUSATION OF DISEASE.

There is probably no disease which has not been connected with certain morbid processes in an ancestor. In all etiologic considerations heredity has always occupied a very prominent position, and its import has become so firmly fixed in our mental calculations, that no ordinary argument will succeed in dislodging it ; yet it received its place more from analogy than from direct proof. The child inherits certain physiologic attributes, then it probably receives certain weaknesses and abnormalities from the parent ; many disorders were found in both the parent and offspring, and the apparently logical deduction was that it was inherited.

Among the earliest theories was that which claimed that the then unknown seeds of disease was transmitted directly to the offspring. Later in life certain physical excitants, or certain changes in the envi-

ronment stimulated this seed to grow; or it was asserted that the diseased ovum or spermatozoon carried with them certain changes which were transmitted; thus was explained the origin of many infectious diseases.

With the advent of modern critical methods this theory was gradually modified. The import of heredity was given a less prominent place; it was assumed that a predisposition or tendency to a certain disease was inherited. This theory became very popular with the discovery of bacteria as the cause of the disease; it was constantly reiterated that bacteria required a certain soil upon which to thrive; and this soil was prepared in the greatest measure by inherited peculiarities. Except syphilis—and rarely some other infectious disease—the direct transmission of the germ was denied; in its stead came the theory of predisposition and diathesis.

Billroth and others maintained that tuberculosis was not inherited, but a predisposition to the disease was received from the tuberculous ancestor. The older authorities made this predisposition a very important, if not an absolutely necessary element in the etiology. An individual could assert with pride that none of his ancestors died of tuberculosis, and many a person felt securely safe from the disease on account of this fact. The rheumatic, gouty, and lymphatic diatheses were names describing these constitutional tendencies. This theory held an undisputed position in spite of the assertions of biologists that acquired characteristics were not inherited.

At present the signs of the times indicate that this position will be abandoned. The highest authorities now boldly assert that no special predisposition is inherited from tuberculous parents; the greater prevalence of the disease among such persons is due to their greater exposure to the contagion. A recent writer has collected considerable evidence to show that children from tuberculous parents really show a greater resistance to the disease than children born from non-tuberculous parents. The assertion is made that if children with no history of tuberculosis are placed in families who have one or more tuberculous members, the foster children succumb to the disease earlier than the offspring; it is claimed that the latter by virtue of the parent having the disease receive a greater power of warding off the infection. The child of the tuberculous parent is usually much more liable to be infected, living as it does during the various states of childhood in a

place where fresh tubercle bacilli are disseminated; and there is nothing absurd in the idea that it may inherit a greater power to resist this disease, at least from the mother.

PROBLEMS OF EXPERIMENTAL THERAPEUTICS.

The foundation of rational therapy is experimental therapeutics. This, again, was based on the known physiologic phenomena of the animal organism. A given drug was administered to an animal and the modification of the normal function noted; with the invention of apparatus for accurately recording physiologic effects, experimental therapeutics was placed on a definite scientific basis; different investigators could thus compare the result of their researches. These methods led to very valuable discoveries, and formed the principles of modern therapeutics.

But this experimental work in the last decade has fallen somewhat behind the progress in physiology and pathology. Experimenters are still measuring the effects on blood pressure, cardiac contractions, respiratory movement, etc.; but few or no experiments are offered to show the effect of various drugs on those processes which overcome infections and intoxications. Reference is made particularly to the formation of animal antitoxic and bactericidal substances.

In this field a large opportunity presents itself; it is known, for example, that the coal-tar antipyretics reduce fever and thus modify one of the dangerous symptoms of many infectious diseases; but nothing is definitely known as to their effect on those processes which antagonize bacterial proliferation. The depressing effect on the heart at least suggests that they may inhibit other cellular activity. In the present literature much is reported which clinically indicates that many antipyretics, hypnotics, and antispasmodics act deleteriously to the organism, in that the natural resistance is weakened; it would seem therefore, more valuable to determine the effect of a chemical on these processes of the body, than to tabulate the effect on blood pressure and thermogenesis.

The effect of various drugs on antitoxic and hemolytic production might be obtained, and thus serve as an index to other vital antagonistic powers. In disease produced by the micrococcus lanceolatus such experiments might serve to elucidate some of the bewildering and

unsatisfactory data on the treatment of pneumonia, which we now possess.

Another department which experimental therapeutics has barely touched is the after-effect of certain chemicals. It is recognized that bacterial toxins may induce changes which remain permanent ; may not similar results follow the use of laboratory chemicals? Is the anemia, irritable weakness, and neurasthenia following certain infections the consequence of disease, or do the drugs contribute to this change.

It is not enough to ascertain that a drug increases or diminishes blood-pressure. The more obscure, but yet significant effect in disease processes is what the practitioner demands from the experimenter.

EDITORIAL COMMENT.

Greeting.

The editorial management of the *COURIER* changes with this issue. We have only the highest praise for the excellent work of our predecessor ; he has maintained this publication in the ranks of the first-class medical journals. The original articles, the editorials, and the reports on progress compare very favorably with any journal of this country. We thank him for this example which he has set, and we feel that it will require great care and continuous industry on our part to prepare an equally valuable journal ; but industry will not be lacking, and we are determined that no one shall excel us in issuing a journal that shall reach the highest degree of usefulness to the medical profession.

Additions have been made to our staff of editors ; young men full of energy and keenly interested in the advance of medical science. Nearly all are teachers, or connected with the clinical department of the Washington University Medical Department.

Changes in the Contents.

In studying the needs of the general practitioner, two subjects occurred to us which stand in intimate relationship with every-day practice ; the first of these is diagnosis, the second, therapeutics. The

COURIER will henceforth contain a monthly review of modern diagnostics signs and methods. This department will be under the charge of the editor. The practitioner will herein have an opportunity to familiarize himself with the progress of diagnosis; the subject will be treated critically, and new signs and symptoms reported will be compared with the old; the study of symptoms and signs as are met at the bedside has not hitherto received the attention that it merits in the medical press. We hope to make this one of the most interesting and valuable departments,

The treatment of the sick is the final object of medicine; a special department on this subject will appear; the subject will be treated critically; the newer remedies compared in action with those which have been used for some time; formulæ of distinct value containing drugs which can readily be procured will also be published.

Leading articles discussing the latest conceptions of medical problems will be published monthly.

The scientific proceeding of the Bethesda Pediatric Society will be published monthly. The subject of children's diseases is extremely interesting to the practitioner. This is the only society, with perhaps one exception as far as we know, in the west, that is devoted entirely to the study of pediatrics.

The Comparative Digestibility of Raw, Pasteurized and Cooked Milk.

The controversy regarding the comparative digestibility of raw or cooked milk is by no means concluded. Though there is a decided leaning toward the uncooked milk at present, many physicians still employ Pasteurized or sterilized milk for infants. The reason given is that the danger of gastro-enteric infections outweighs any slight deficiency in nutritive value of the sterilized milk; still many do not seem to be convinced that Pasteurized or sterilized milk is less readily absorbed. In order to throw some light on this subject the Maryland Agricultural Station undertook some experiments. In a recent bulletin (No. 77) they gave a full report of the results of these experiments:

Young calves were fed on raw, Pasteurized and sterilized milk; the feces were collected and the solids calculated; the amount of

milk ingested and the exact quantity excreted were thus compared and the amount assimilated deducted. Their conclusions are in accord with the present belief; they found that raw milk is more easily digested when fed to calves than either Pasteurized or cooked milk. Contrary to theory, cooked milk when fed to calves used in these experiments caused violent scouring in the majority of trials. We believe this fact should be given another test, since this action is the opposite to what is usually obtained in infants.

They report that the majority of physicians with whom they correspond favored the use of raw milk for infants when the milk is known to be in perfect condition. Skim milk was found to be as digestible as whole raw milk.

The future problems of the milk is improvements as to its purity, and practical methods of keeping it pure; the methods employed to destroy germs after they enter the milk can never make the milk what it was originally.

Tetanus Due to Diphtheria Antitoxin.

It is reported that about twelve fatal cases of tetanus, following the injection of diphtheria antitoxin occurred in St. Louis recently. Many of these injections were made in healthy children for the purpose of immunization. This accident will come as a shock to the members of the profession. The serum was furnished by the St. Louis Health Department; the Health Commissioner has ordered a thorough investigation of the unfortunate occurrence; Drs. B. M. Bolton, C. Fisch and E. C. Walden have been asked as experts to examine the antitoxin and investigate the cause of the deaths. Until a report of this investigation is received no definite charges of negligence can be made. It is known that the horse from which the last antitoxin was drawn died of tetanus, but according to the statement of the City Bacteriologist no serum from this horse was distributed after the horse was taken sick. The contamination of the serum by either the toxin or the bacilli of tetanus is a mystery as yet.

This terrible accident strikes a forcible blow on the practice of serum therapy; for this reason it is the more to be deplored. The general public always viewing all surgical procedures with suspicion will recall this incident with terror and refuse to have their children immunized against diphtheria when exposed. Many will refuse to

have even their sick child suffering from diphtheria injected; the consequence will be an increase in the prevalence of the disease and an increase in the death rate. The deplorable accident, therefore, will have far-reaching secondary results, and the sad death of the twelve will be greatly outnumbered by victims of diphtheria during the coming months.

Though a temporary depression in the free use of antidiphtheritic serum may result in St. Louis, its influence on the whole serum therapy will be very slight. The enormous reduction in the death-rate of diphtheria all over the world, since the use of antitoxin, speaks too plainly to be passed by as an accident which certainly can be avoided. The physician who in pre antitoxin days had the sad duty to sign death certificates of diphtheria, and since the introduction of this remedy has had practically no mortality, will not be deterred from using it; but that the practitioner will take pains to satisfy himself that a certain serum is prepared with the utmost precautions against contamination is obviously to be expected.

The Deaths in Italy.

About one year ago a similar accident happened in the northern part of Italy. It was found that tetanus occurred in a certain number of children who had received antitoxin, and about twenty children died. References to this deplorable accident will be found in the *Muenchener Med. Wochenschrift*, of January 22, 1901, and the *Semaine Medicale*, January 23, 1901.

It was found that the contaminated serum was all of a certain series which was delivered November 29, 1900; but it seems that no satisfactory explanation of the contamination was discovered. It was impossible to produce tetanus in animals inoculated with the blood of any of the patients who died, and no tetanus bacilli could be found in the recovered serum; it was finally thought that some spores of the bacillus had accidentally fallen in the serum during bottling. This theory was strengthened by the fact that extensive repairs on the building were being made at the same time.

But we are unable to find any record of the experiments made to determine the purity of the serum. The presence or absence of tetanus toxin taken from the horse does not seem to have been seriously considered; at least no records of the experiments are available.

The Possibilities of Contamination.

The possible means of contamination are many, but the most dangerous of all is the presence of tetanus in the horse from which the serum is drawn; thus the actual toxin may be present with or without the bacilli. In the early stages of tetanus, the blood of an infected animal may contain the toxin in large quantity; the actual bacilli of tetanus have been demonstrated in animals which have tetanus.

Then, during the preparation of the serum, the coagulation, the separation of the serum, the filtration, and bottling, some contamination may occur; but it has been assumed that any accidental contamination is rendered harmless by the addition of the preservative, tricresol.

The final danger of infection is by careless surgery; the practicing physician who uses surgical cleanliness has nothing to fear. Local infections do not often occur, judging from the report of numerous clinicians.

The Report of Milk Commission.—Dr. Chapin, Chairman of the New York County Medical Society Commission, in making the report, confessed that he believed there were two camps of those interested in the milk supply, the medical profession being on the scientific side and the milk dealers on the commercial side; but he found that the dealers were very anxious to co-operate in the efforts to obtain clean and good milk. Of his visits to the farms, he says:—"All the visits made to these farms were educational. The whole family, including wife and children, became interested and co-operated in the work. The attention of neighbors was also attracted to the improvements, which were often imitated, and formed the subject of evening discussion at the village grocery store." The report insists that co-operation must extend to all concerned in the milk, in order to reach the best results. The dealer, the transporters, and the direct suppliers, and the families who buy the milk, all along its way from the cow to the person, each must carefully aid in preserving the milk.

NEW YORK CORRESPONDENCE.

PLAGUE IN ENGLAND AND SCOTLAND.

NEW YORK CITY, }
October 31, 1901. }

Editor COURIER :

Now that two typical cases of Boccaccio's "Black Death" are reported by our Consul as occurring in Liverpool and the reappearance of the disease in Glasgow is well authenticated, it becomes at once the duty of medical magazines to raise a strong voice and preach in no uncertain tone the gospel of rigorous vigilance to our National health authorities.

Time, which explains everything without being asked questions, has shown the efficiency of our health officers at all ports on both the Atlantic and Pacific seaboards. The people of the interior confidently and with reason, trust the good officers of quarantine and want to feel continually that the beacon light which burns in the uplifted hand of Liberty monument in New York bay means ever that we are clean as well as "free," and that no importation of infectious maladies can pass it.

The case that was lately detected on board ship at the entrance of the harbor was properly treated and the vessel, its cargo and company correctly managed at the detention station. There is no fear, whatsoever, now of the bubonic monster, as modern methods of isolation and disinfection are its master and could effectually hold it in check were a case to get on shore.

But we do not want the Oriental guest—we are exclusive and he is unwelcome. Insomuch as we are daily and even hourly in touch with England and never know when a Liverpool liner may ship the virus, we are rightly anxious that the necessity of extraordinary prudence just now be brought constantly to the notice of those in authority.

Within the past twenty months we have visited every coast city of importance from New York to Mobile with the exception of Key West and Norfolk.

The machinery for grappling with contagion is in excellent trim and we willingly repeat, this country is with painstaking precautions practically invulnerable.

But the subjects of sanitation and quarantine are great and grave ones, susceptible alike to the improvements which regularly occur in all our institutions. Medical men have no copyright on either of them; they are open wide to the lay press and every exhorter has the freedom of the rostrum. This communication may be considered a reveille for volunteers. It is proper there should be sufficient inquiry at all times into the status of affairs—Americanism demands it, and every person who exercises the sacrament of citizenship is entitled to a hearing in the discussion of anything pertaining to the public health. A small coterie of privates, if they will do a little fighting at the present moment with goose-quills, can do more good in one hour than can be accomplished in many days by a thousand officers armed with swords after we are invaded by an enemy.

The obscurest lay publication, whatever its paucity of medical knowledge and crudity of technical terms, can enlighten its readers upon the simple means of immunity—namely, careful personal and domestic cleanliness, and should come out cheerfully, when occasion demands, with its quota of argument; since, if it reach but one person, conveying zeal and energy to comply with the laws of hygiene, that is at least a degree better than silence, for an inspired person will surely and quickly enthuse another, thereby establishing a rapid compound interest.

JACKSON.

Hospital Cars.—Many railway surgeons seem to be very much interested in the plan of having a hospital car on every train. It has been suggested that a small compartment on every car be equipped with necessary surgical instruments and dressings, also a supply of medicines that shall meet the emergencies which may arise. This is certainly a commendable movement and should be encouraged in every possible way.

DIAGNOSTICS.

The Raspberry Tongue in Influenza.

The strawberry tongue, so characteristic in scarlet fever, is often imitated more or less by other conditions of this organ; the swollen papillæ fungiform when scarlet in color give the appearance of a strawberry and are almost pathognomonic. But these papillæ may swell in other diseases; in most of these the color is less brilliant, a slightly darker shade of red, hence the appropriate name, raspberry tongue. Such a tongue is often seen in measles; it is also found in many cases of urticaria with lesions in the mouth. Recently, Franke (*Deutsche Arch. f. klin. Med.*) has given it place among the diagnostic signs of influenza; with this sign he couples the narrow red stripe on the posterior edge of the soft palate and a slight enlargement of the spleen.

Desquamation of the Skin.

Desquamation of the skin in large flakes is usually taken to signify the previous existence of scarlet fever; but it must be remembered that various scarlatiniform eruptions may be followed by a profuse desquamation. Some of these depend on the action of drugs, as quinine; others are due to some intoxication from wounds or intestinal decomposition. In these, however, the scaling begins about three to five days after the eruption, while in scarlet fever the scaling begins in about ten days.

Dysphagia.

Pain and difficulty in swallowing in the absence of a history of traumatism, should always suggest disease of the bronchial glands; in the aged, cancer is to be suspected. When the food is regurgitated after the act of swallowing and actual stenosis has been excluded by passing a bougie, a diverticulum of the esophagus is probably present.

Vocal Fremitus Over the Abdomen.

A new and hitherto undescribed physical sign was found by Veber (*Philadelphia Medical Journal*, October 26) in a patient suffering from peritonitis resulting from a perforating gastric ulcer; vocal fremitus

tus was found to be present, distributed over the whole abdomen. This phenomenon was attributed to the presence of gas in the peritoneal cavity.

Iodophilia.

Blood changes are becoming recognized as very valuable in diagnosis; the presence or absence of a leucocytosis has been placed in the extremely valuable signs of certain infections. A leucocytosis usually signifies some suppuration, inflammation of the lung, meningitis, appendicitis, etc. Dunham has added another sign which he has termed iodophilia (*Boston Medical and Surgical Journal*.) A blood smear on a cover glass is mounted in a solution of iodine and iodide of potash; in pneumonia and acute suppuration, in certain polynuclear leucocytes dark brown granules will be found; these dark brown granules he considers diagnostic of the disease mentioned.

The iodine solution which he recommends is prepared as follows:

Three grammes of iodide of potash and 1 gramme of iodine are dissolved in 100 cc. of distilled water, and the mixture is then thickened with acacia, so that it is the consistency of syrup. The blood is mounted in this without heating or fixing.

Biffi (*Polyclinico*), however, believes that the iodophiles are identical with the eosinophiles. If this is true the diagnostic value assigned to them by Dunham is probably erroneous, since all investigations to date deny that the eosinophiles have any diagnostic value, except in a few diseases, as trichinosis, for example.

Asthma Due to Thyreoptosis.

According to Kocher (*Centr. f. Chir.*, 1900) thyreoptosis or descent of the thyroid gland may cause paroxysms of dyspnea which very much resemble attacks of spasmodic asthma. It is obvious that a displaced thyroid situated beneath the manubrium sterni, may press on the trachea. The thyroid gland is known to enlarge considerably in various infections, in intestinal intoxications, and also in many simple nervous excitements; in these cases any acute disease may usher in an attack of dyspnea.

Acute Formation of Gas in the Stomach.

Eruclations of gas from the stomach may be very acute; the patient may belch forth large quantities every few minutes; with this

symptom cardiac dyspnea is often present; it may signify the end of an attack of angina pectoris. When the gas has a foul odor it invariably means bacterial decomposition in the stomach; it is common in simple indigestion, gastric catarrh, dilatation, etc. Enormous quantities of gas are expressed in nervous and hysterical persons. The origin of this gas is as yet not understood; the theories offered are that it is due to air that has been swallowed; that it is produced by the inspiration of air when the cardia is patent; that it is caused by chemic respiration of the gastric mucous membrane; and finally, Benedict has offered the theory that the gas is produced by the mixture of the acid gastric juice and the alkaline intestinal juice in the stomach.

Gastro-Enteric Symptoms Indicating Diabetes.

Schutz (*Wien. Med. Woch.*, 1901, No. 20) calls attention to the fact that diabetes mellitus may present symptoms referable to the alimentary tract. Patients may be treated for some gastric or intestinal disorder and the underlying cause overlooked; he distinguishes three forms of these disorders which should make the clinician suspicious of diabetes: First, gastric crises, very much resembling the crises of tabes; second, paroxysmal pains, usually diagnosed as gastralgia; third, loss of appetite and constipation. He suggests that the urine be examined whenever any of these groups are present for any length of time.

Epigastric Pain.

Pain in the epigastrium is usually referred to the stomach; ulcer, gastritis, hyperchlorhydria, hypersecretion, painful neurosis, gastritis, gastrectasia, and cancer must be considered. The abdominal wall immediately over the stomach may be the seat of an abscess; to the right of the pylorus lies the gall-bladder which is so often the seat of gall-stones and inflammation; violent gastralgia, according to Bettman, (*Clev. Journ. Med.*, July, 1901) is most frequently due to gall-stones and cholecystitis. The paroxysmal nature of the pain, independent of the gastric contents, and accompanied by considerable prostration is almost diagnostic.

Disease of the spinal column (Pott's disease) may be first indicated by pain in the epigastrium; certain spinal diseases, as locomotor ataxia, may be accompanied by such pain. Bettman describes an interesting form of pain in the epigastrium occurring in chlorotic

girls. Elderly people suffering from arteriosclerosis frequently complain of a pain beneath the ensiform cartilage; this pain is most troublesome after meals; no tenderness and no dyspnea is usually present. This is an annoying but not dangerous symptom.

Clinical Characteristics of the Syphilitic Chancre.

Fournier (*Int. Med. Mag.*, October, 1901) in a clinical lecture points out the clinical characteristics of the syphilitic chancre; in a great majority of cases it is a single lesion; it may be said that out of ten there are two multiple and eight single lesions. The most important signs of chancre are all contained under the following six headings: (1) A small circumscribed lesion, eroded more frequently than ulcerated; (2) an erosion not circumscribed; (3) a smooth erosion; (4) an erosion habitually red, sometimes grey; (5) an indurated erosion; (6) this erosion accompanied by an adenopathy. These different particulars will be found to be elucidated by the study of the evolution of the chancre; this naturally divides itself into three periods, onset, maturity, and repair.

During the first days of its existence, the chancre is a very little thing, hardly comparable to the most insignificant ulcerations. Here the diagnosis is impossible from herpes or simple excoriation; in the second period it is characterized by two phenomena, the extension of the erosion, and the induration. The chancre is not painful, except when irritated by applications, bandage, rubbing, etc.; it is a small, usually round or elliptical lesion. As to color, two forms are recognized, the red and the gray; the latter owes its color to a thin pseudomembrane; the red color of muscle is almost characteristic; the induration is characterized by more or less marked hardness at the base of the lesion. It is sharply circumscribed, and the hardness is very peculiar, resembling nothing else.

The chancre remains stationary for awhile, then enters the terminal period of repair; the lesion swells and takes on a papular form; the induration remains, when this disappears no scar is usually present.

Obstinate and Spasmodic Sneezing.

Sneezing occurs as an early symptom in those diseases in which some irritation of the nasal mucous membrane is present, such as influenza, coryza, measles, hay fever, asthma, nasal diphtheria, and some-

times in rubella. The inhalation of certain substances, as pepper, horseradish, tobacco, and many others, are too well known to need mention. Reflex irritation of the eyes or auditory canal may induce spasmodic sneezing; several cases of pertussis have been reported which were characterized by severe spasmodic sneezing. Recently Korn (*C. f. Gyn.*, June 22) reports that a woman in the last weeks of pregnancy, without any obvious cause, began to have incessant attacks of sneezing which resisted all treatment. This convulsive sneezing lasted more than a week, when spontaneous delivery occurred; after parturition the sneezing ceased.

Pain in the Knee.

Pains in and about the knee-joint signify in the first place some local disease; *e. g.*, rheumatic arthritis, synovitis, gonorrheal arthritis, arthritis deformans, tuberculous disease, etc. Most commonly an acute pain is due to injury; in infants a sudden pain near the knee without apparent injury should cause an inquiry into the presence of scurvy. Very well known are the referred pains from hip-joint disease; sacro iliac disease occasionally causes a pain in the knee. According to Freiberg (*Clev. Jour. Med.*) it is not so well understood that pains in the knee may have their origin in the foot or ankle. The conditions of the foot which may cause knee symptoms are, the contracted foot (non-deforming club-foot of Shaffer), the weak or pronated foot without sinking arch, and the typical flat-foot with its accompanying pronation. The pain in the knee disappears on remedying the condition in the foot.

Testevin's Sign of Infection in Children.

This is a peculiar reaction of the urine which Testevin believed to be invariably present during the incubation of infectious diseases. The reaction is elicited as follows: A specimen of urine from which all albumin has been removed is acidulated, a third of its volume of ether added and the mixture is agitated briskly; in a short time a colloid-like pellicle of varying thickness, consistence, and adhesiveness forms on the surface, Modena (*N. Y. Med. Journ.* July 20) has observed this reaction in twenty-one cases of infections and never found it present in healthy children; he does not regard it of any diagnostic or prognostic value

THERAPEUTICS.

In Charge of

W. L. JOHNSON, M.D., and A. LEVY, M.D.

Saccharomyces Cerevisiæ.

Warner (*New England Med. Monthly*, October, 1901) writes very thoroughly on this fungus, recalling Landan's employment of a solution of brewers' yeast in vaginal gonorrhea, basing his treatment on the fact that this fungus has greater vitality and propagates more rapidly than gonococci, which, in consequence, are crowded out.

Very important are the observations that yeast may favorably influence the course of diabetes. The effect of the yeast upon the intestinal contents, with special reference to the utilization of sugar, make it possible for a patient to partake of a liberal hydrocarbon (?) diet (carbohydrate), without increase of the glycosuria. The yeast converts the sugars in the intestines into alcohol and carbonic acid, acting only upon the sugars derived from the food.

The administration of yeast is followed by an increase of lymphocytes, thus causing an increase of phagocytes whose function is to remove from the circulation all foreign material. Upon ulcers and malignant growths it dissolves the pus, stimulates granulations and acts as a protector to the diseased surface. It is useful in psoriasis, acne, urticaria and furunculosis. Given in one gram doses, four or five times daily, in conjunction with a poultice, it is peculiarly useful in ulcers, furuncles and suppurating foci, converting ichorous into laudable pus, checking the degeneration and excretion of aged leucocytes, thus checking pus formation, and on the contrary, creating young phagocytes to assist in the removal of any and all foreign substances. He uses "Cerevisine," a dessicated form.

Unguentum Crede.

Daxenberger (*Ibid.*) records some recent cures of meningitis in children attributable to the inunctions of Crede's silver ointment. He does not think it wise to apply the ointment to the patient's head, neck or trunk, if only for the pain entailed thereby. He employs the four extremities; the quantity should be warmed and then thoroughly

inuncted; almost every trace of the salve must be made to disappear and this consumes at least a quarter of an hour. The first sign is a fall in temperature and then the symptoms of motor irritation remit.

Suprarenal Extract.

Adams (*Medical Fortnightly*, September 25, 1901) in enumerating the virtue of suprarenal extract quotes Swain as follows: "In that most distressing condition, quinsy, I have succeeded in giving more comfort by spraying with capsule extract, and then applying cocaine, than ever before. The two used together produce a very distinct diminution in the size of the swelling, and during this period a glass of milk and a raw egg, together with a little stimulant, can be worried down when previously impossible."

[Adrenalin chloride solution 1 to 1000 has supplanted solutions of the extract for external use and is recommended in 5 to 30 minim doses for internal administration]

Respiratory Exercise.

Abrams (*Ibid.*) considers respiratory exercise in diseases of the lungs of decided benefit, noting that all factors that interfere with thoracic mobility—corsets, unsuitable clothing, etc., must first be removed. The diaphragm, as suggested by Campbell, should be strengthened by making it contract against resistance in the shape of pressure applied to the anterior abdominal wall, as, for instance, by a sheet of lead, varying in thickness, fitted to the abdomen in the horizontal position of the body. Breathing exercises consist of 1, active breathing; 2, active breathing exercises conjoined with other exercises; 3, passive breathing exercises; 4, exercises for developing the abdominal muscles.

A simple exercise is that of Blakes. The patient, while in the erect posture, blows through a small opening produced by pursing the lips; at the same time he bends his head and then the dorsal portion of the spine, while with his outspread fingers he compresses the sides of the thorax. This accomplished, the fingers are interlaced behind the neck, the mouth is closed, a very slow and prolonged inspiration taken through the nostrils, while the spine is slowly extended at the same time. This exercise expands the chest and may be made more effective by encircling the chest with an elastic bandage. Blowing water from one bottle to another should not be forgotten.

The Use of Heroin in Heart Cases.

Ludwig Levy, Budapest, (*Die Heilkunde*, IV, 1901) used heroin successfully in a number of cases of cardiac dyspnea, using it as a substitute for morphine in the dose of 4 mg. three times daily. In his cases the cough, the dyspnea and the pain were all allayed more quickly than with morphia. In one case heroin was given continuously for seven months without diminution of its effect, another point of advantage over morphine. He also recommends heroin for continued use in angina pectoris, especial those cases thought to be due to coronary arterio sclerosis.

The Use of Ethyl Chloride in Treatment of Lupus.

Dethlefoen (*Hospitalstudeude*. January 16, 1901) reports a case of lupus treated successfully by repeated freezing with ethyl chloride. In his case the process involved the nose and cheek. The freezing was done daily at first; later, at intervals of two or three days. A scab which always formed was removed before each freezing. Complete cure with practically no scarring resulted after ten weeks' treatment.

Treatment of Sciatica by External Application of Hydrochloric Acid.

V. Eljasz-Radzikowski (*Therap. Monatsh.*, No. 8, 1900) has taken this heroic measure in a large number of cases; he used the pure acid and painted it over the most painful points. At the point of application there resulted first, hyperemia, then blistering. The skin reaction, says the author, subsides in two days and the treatment can be repeated. He was well satisfied with his results, especially in very obstinate cases which had resisted the ordinary methods of treatment.

Chloretone.

The abstractor's experience with this drug and with heroin does not accord with the many favorable results recorded daily. Nevertheless while he may be satisfied with chloral and codein it is only justice that the literature on the newer drugs be promptly reviewed. Thus Ellis (*Louisville Monthly Journal of Medicine and Surgery*), extols chloretone as an hypnotic especially in delirium tremens, and in nervous insomnia, in doses from 8 to 15 grains in tablet or capsule. As a local anesthetic 1 to 5 per cent solutions he considers a "close sec-

ond" to cocaine. Of course, vomiting of pregnancy has another specific in chloretone and vomiting of all sorts is benefitted by it.

Tuberculin.

In the *Journal of Tuberculosis*, Volume III, No. 3, is an abstract of Dr. Goetsch's article reporting beneficial and even curative results from the proper administration of tuberculin. His first principle is to treat no patient with it until fever is reduced by rest in bed, and other measures. If this is not successful the patient is not considered eligible for treatment. The initial dose is usually 0.0001 g. of old tuberculin; if elevation of temperature results the dose is reduced to 0.00001 g. If this is not tolerated T. R. (Koch's new tuberculin) is employed in dose of 0.001 mg. By gradual increase patients may tolerate 1.0 g. of old tuberculin. Patients should remain in bed a day or two after injections; injections are given twice weekly.

Treatment of Urethritis.

Long (*American Medical Compend*, October, 1901) contends that there is little difference in results from injections and internal treatment, one or the other alone or the irrigation plan. After trying everything and every method suggested, he combines local and internal treatment. One per cent protargol is prescribed at the outset, as an injection thrice daily; the strength is gradually increased and kept up until discharge ceases, after which a weaker solution is used for ten days. Internally a laxative is used and a capsule of methylene blue sandal and cinnamon oil and sodium salicylate; this is followed by sodium sulphide in tablet form and an emulsion of balsam copaiba, liquor potassi and colchicine, 1 dram every four hours until discharge ceases.

Hydrotherapy.

Baruch (*Ther. Gazette*, September, 1901) again writes on hydrotherapy and gives us some pointers gleaned during a decade. The safe limits of a bath temperature is 40° to 110°F., an enormous latitude when we consider the different effects that may be elicited by every five or ten degrees increase or diminution of temperature.

Pressure too is a good factor, for if you place a patient in a bath of 60°F. there will be discomfort and shivering, whereas if the 60°F. water be applied as a douch, twenty-five pound pressure, stimulation will be the effect.

Here are are some of his don'ts :

Don't bathe with cold water to reduce the temperature, but to refresh the feverish stricken patient.

Don't permit cyanosis or chattering of teeth; stop.

Don't stop bathing because patient complains of chilliness, unless the teeth chatter.

Don't raise bath temperature on latter account. Shorten bath and increase friction.

Don't neglect friction during every cold procedure; it prevents chilliness.

Don't disregard the well ascertained fact that the Brand bath (65° to 70°F., every three hours when awake, with active friction) is the ideal bath for typhoid fever only.

Don't use the Brand bath in a bath room.

Don't give up cold bathing because the ideal bath is not obtainable; other procedures are useful,

Don't use the ice coil to the abdomen; it has no refreshing effect and renders the skin beneath it cyanotic.

Don't lose sight of the fact the chief aim of all cold procedures is reaction.

Remedy for the Dispensary Evil.—An evening paper of St. Louis a few weeks ago reported the incidents that befell a wealthy dry goods merchant who applied at the City Dispensary for treatment. He suffered from a slight contusion of the head, called an ambulance, and was driven to the Dispensary; here he acted in a manner that seemed very strange to the physican; he asserted that he was no charity patient, that he was a tax payer, and had a bank account. He was finally taken to the City Hospital, and in spite of his protests was given a bath, and clad in the uniform of the hospital; then he was placed in a cell in the observation ward for the insane. It was some time before he was released.

This event suggests the proper remedy for the deplorable dispensary evil; if every applicant who showed signs of wealth would be regarded with suspicion, and placed in the observation ward for insane for a few hours, well-to-do patients would become very scarce at the dispensary.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of June 6, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. A. H. MEISENBACH presented a specimen of
Rupture of the Bladder.

This specimen is the bladder removed from a gentleman 84 years of age upon whom the speaker did a suprapubic cystotomy for obstruction due to enlarged prostate. The case was reported at a previous meeting of the Society. The patient was improving steadily and yesterday seemed in such good condition that he was told a few more days would complete the cure. About two o'clock this morning the patient had a fainting spell and died in about an hour.

On May 14th a secondary operation was made necessary in order to freshen the edges of the fistula and bring them together. This was a very simple operation and was done without an anesthetic. This second operation, however, seemed to have a debilitating effect upon the old gentleman and while he did not complain, it was evident that he was not in as good condition as before.

On opening the bladder post mortem no special changes were seen. The attachment to the abdominal wall was firm. This brings up the important question of the return of functionation of the bladder. It seems reasonable to suppose that return to functionation will be slower where the organ is attached out of its normal anatomical position. One thing noticable is the size of the prostratic sinus. The finger can be passed into the sinus and the middle lobe does not infringe upon the prostratic urethra. He demonstrated the ease with which the capsule could be enucleated and called attention to the importance of this feature in doing the peroneal operation and enucleating the prostate from below. He thought this the coming operation and superior to the suprapubic operation where the conditions would

admit it. A small calculus was found in one of the seminal ducts.

MR. L. F. ABBOTT read a paper (see page 344, this issue) on the

Advantage of Spaying Cows.

DR. E. M. NELSON, speaking on this subject, said he thought all of us had seen children showing signs of ill health, gastric disturbance, etc., which could only be explained by the fact that the mother was menstruating at this time. Those who have had much experience in the care of children realize that this same condition takes place when a cow from whose milk the child is fed is in heat. Milk furnished by such a cow is feverish, and disagrees with the child, sometimes causing a serious illness. About seventeen years ago he read in the *Boston Medical and Surgical Journal*, some articles in regard to the use of milk procured from spayed cows. It interested him at the time, but he had not seen or heard anything more on the subject since then. A few days ago a gentleman called at his office who proved to be the person who wrote the articles referred to. He considered the subject an interesting and important one and had decided to ask Mr. Abbott to present the subject here. Dr. Nelson then introduced Mr. Abbott who read the paper.

DISCUSSION.

DR. JOS. GRINDON said it had always been a matter of wonder to him that with methods so crude the results should be so good. Mr. Abbott had said the mortality ought not to exceed $\frac{1}{4}$ of 1 per cent. This the speaker thought, would be considered good statistics anywhere. He asked what aseptic precautions were taken. He would have thought that a spayed cow would cease to give milk.

DR. MEISENBACH said the idea was novel but from a scientific standpoint he did not see much in the subject as presented to discuss. The practical question as to what value this milk would be to the infant was not well brought out. Nothing had been said about the analysis of this milk and no statistics as to whether the child fed on this milk was better nourished. From a scientific standpoint he thought we should have some data as to the analysis and component parts of this milk showing wherein it differs or is superior to other milk.

The question of the surgical procedure is not a difficult matter. Arteries are not tied off as in the human, but are twisted and torn and hemorrhage is controlled by this torsion process.

DR. CHARLES SHATTINGER said the bulk of milk analyses given us have been practically worthless. These analyses have consisted in a statement of the amount of proteids, carbohydrates, fat, etc., comparisons between the milk of different animals, or of the same animal at different times, and between human milk and animal milk. By such analyses and comparisons an attempt has been made to establish the relative value of different milks and to find a substitute for human milk. As physiological chemistry is becoming more advanced we are beginning to realize that something more is needed than these analyses have afforded.

These analyses give us information of the nutritive value of milk the same as they do of the nutritive value of any other food, but they do not establish that in which we are most interested, namely, the effect the milk will have upon the child, and the effect it may have in causing disease. It would seem that the effect of milk in these particulars depends upon constituents which have heretofore escaped analyses. What these constituents are, we do not as yet know. They are not definable by the grosser processes of chemistry, but will have to be approved by the more delicate methods of biological research, such as are being used in the investigation of cytotoxines.

MR. ABBOTT, in closing, said a spray of carbolic acid was used before operating and the hands washed with the same solution. He has operated upon 15 cows and lost one in the operation. This was lost through severing an artery and the cow bled to death. In another case an artery was cut but by twisting with forceps the bleeding was stopped and there was no serious results.

He read the following extract from the *Boston Medical and Surgical Journal*, April, 10, 1884, page 353:

"Dr. E. W. Cushing stated that there is always an infant in his house. He has used the milk from a spayed cow for more than a year and finds it to be a good product and of uniform quality. New milk (after calving) is not good for children, and the milk during menstruation is not wholesome for an infant. Cows and woman are much alike in this respect. The milk taken from a pregnant cow is unwholesome for a delicate person, and no mother thinks of nursing her child after she has again become with child. Milk as we obtain it is often neither natural nor healthy, for no animal in a natural condition gives milk while she is carrying her young."

DR. WILLARD BARLTETT read a paper (see page 321, this issue) entitled

Retained Testicle, With Surgical Features and Microscopic Findings in Three Cases.

DISCUSSION.

DR. BRANSFORD LEWIS said it is a fairly well-founded belief of the profession that individuals suffering with cryptorchism or monorchism are sterile and this is true in a large majority of cases. In monorchism the retained testicle is lacking in impregnating elements and in cryptorchism both testicles are sterile. It is not ornamental to have the testicles hanging in this unusual way and some patients will ask advice about their removal. The speaker did not think the simple fact that spermatozoa were absent and that there was likelihood of malignant degeneration sufficient reason for removing the testicles. It is well known that old men who have no practical use for their testicles, and who have been deprived of them for the purpose of curing prostatic obstruction, have become very morose as a result of the loss, and cases of actual insanity have developed in persons unsuspected of any such tendency, following castration. The impression is very great on the mentality of even an old man and it is liable to be very much more so on a younger individual. They have been replaced by celluloid "testicles," but the possession of one's own testicles, even though they be of little use, has a good moral effect.

The theory that the condition is a lack of development rather than simple malposition, is very plausible; it is a lack of physiological and anatomical development, and this explains why there are no spermatazoa. The speaker mentioned a case quoted in the *Philadelphia Medical Journal* in which the writer was satisfied that there was positive proof that a cryptorchid was the father of a child.

The speaker said he had watched two cases for eight or ten years. He told them he would be willing to take out the abnormal testicle provided the necessity became evident but as yet no occasion had arisen for doing so. As a result of gonorrhea in one case there was an epididymitis in the retained testicle which subsided in the course of a few days. That was about four years ago and he has had no trouble since. In the other case there never has been any trouble of this kind.

He asked the essayist to give his opinion as to whether it would be advisable to remove an undescended testicle to avoid a possible development of sarcoma or carcinoma?

DR. MEISENBACH said the testicle given Dr. Bartlett by him was from a young man 33 years of age who had undescended testicles on both sides. The cause for operation was an inguinal hernia on each side. The testicle on the right side was located about the linea pectinea over the pubic bone. This was very painful at times and confined the patient to his bed. The other testicle had never given any trouble. This was closely attached to the hernial sac and when freed was not recognized at first as a testicle—it looked very much like a retention cyst. After examining it closely it was seen to be an undeveloped testicle. The virile power of this patient the speaker did not know. He was well developed and had a full beard but was bald headed. In another case he removed an undescended testicle on the right side on account of inguinal hernia in a young man of 18 years. He was above the average height for his age, below normal in weight and inclined to be delicate.

The speaker thought these undescended testicles are, in many instances, the causative factors in inguinal hernia.

As to the virility of these men the essay throws important light on the subject. It may be that there are other causes for the virile power of the man and this power may lie in the prostate as an accessory organ. We know that some eunuchs are virile even after their testicles have been removed. From an operative standpoint he believed the patients would be better off without these undeveloped, defective organs. They are liable to carcinomatous or sarcomatous degeneration, which is always a menace.

DR. W. D. HAGGARD, JR., of Nashville, said he had occasion to operate upon one case which was the result of traumatism. He thought it might be advisable to insert a celluloid testicle for cosmetic purposes.

DR. GEORGE HOMAN said he had had the pleasure of presenting some facts to the Society on this subject in November, 1898. The main feature of this case was that the gentleman presenting this peculiarity stated that it had been present in five generations, except one in which there was no male issue, always on the left side, and in collateral lines the same defect was noticed. It would seem from this

that heredity exercises an important influence upon this condition. This gentleman is the father of two sons by different mothers both of whom showed the same peculiarity. In connection with this subject he spoke of horses with one or both testicles retained and said that country people counted them as being of rather vicious temper and rather below the normal in sexual appetite. It is well known that some rodents periodically experience a physiological atrophy and recession of the testes into the inguinal canal. He asked Dr. Bartlett if he had examined the testis of the squirrel, for example, when in this condition and whether it presented any resemblance, histologically, to the human undescended testis.

DR. MEISENBACH, answering Dr. Lewis' question, said an undescended testicle if not giving trouble and the patient's mind was not abnormally attracted to it, might be left. If, however, it became the seat of trouble or a hernia takes place he would remove it.

DR. BARTLETT, in closing, said he was unacquainted with the condition in animals other than those mentioned.

Replying to Dr. Blair's question he said the so-called sexual education of these persons is not influenced by the removal of the testis after they have attained full manhood.

The question of removing the testis to prevent the possible development of malignant trouble, he would divide as he did in the paper. If the undescended testicle was encountered in the course of another operation and on account of its position was likely to cause future trouble, he would remove it, provided the patient were past 21. However, as Dr. Meisenbach has said, there was no reason to take it out unless it was causing trouble or was encountered in the course of another inguinal operation.

DR. J. G. MOORE read a paper (see page 338, this issue) entitled

A Case of Appendicitis, With Some Unusual Features.

DISCUSSION.

DR. W. D. HAGGARD, JR., said the record of this case was exceedingly valuable as it presented several interesting phenomena. We are not accustomed to see pain reflected along the nerves and glands except in the absence of pressure and tenderness, and pain on the left side are not looked for in appendicitis, although they may be found in the region of the stomach. He felt that the diagnostic value of Mc-

Burney's point is questionable, for in the absence of pain on pressure at this site we are doubtful of the diagnosis. We are often puzzled as to the best time to open the abdomen. We are not prepared to urge an operation with the same assurance that we would if certain of the diagnosis and often the time for operation will pass. So far the speaker's views have passed through about three transition periods. His early belief was that operation should be performed as soon as the diagnosis was made. This is a good rule if you can make a diagnosis, but in many cases this can not be done immediately or we do not see the patient until he has reached a dangerous border line. Then he switched to operating when operation seemed indicated, but this plan proved worse than the other, for the reason that when the operation seemed to be necessary there was usually a perforated peritonitis and death in about twenty-two per cent. At present his attitude is, in a well-marked case that is not getting better within twelve to forty-eight hours, to operate. We never regret having operated too early but we often realize that the operation was put off too long. Some surgeons want to find the appendix and take it out in every case. The speaker did not think this was always the part of wisdom. When an abscess is present we should deal with this and not try to find the appendix. Later, when the patient had fully recovered, the appendix can be removed without danger. In removing the appendix he leaves no stump. This is thought simple and safe. In draining the cavity he did not trust gauze, especially iodoform gauze. The gauze does not drain and iodoform has been followed by urinary symptoms and toxemia.

DR. MEISENBACH agreed with Dr. Haggard that McBurney's point is not always a safe or certain guide in all cases as indicative of the seat of trouble, but relatively speaking it is a good guide. It has been established by several surgeons that the position of the appendix varies, sometimes pointing downward, sometimes upwards and sometimes crosswise. Where the pain is to the left of the median line the appendix has been found to point crosswise. He mentioned a case upon which he recently operated. He was called by the physician in attendance and found an area of tenderness and dullness from the middle of pubis to the right iliac spine. There was no definite point of excessive pain but a general tenderness. He agreed in the diagnosis of appendicitis and the patient was sent to the hospital for operation. The ordinary incision along the border of the rectus was made

but the appearance of the contents of the belly was not what he expected to find. There was no infiltration but the small intestines were very red and in a massed condition and he thought there was an obstruction in the region of the ileum. He extended the incision and gradually eviscerated the bowels and came upon a mass in the ileum which seemed to be sloughed connective tissue in a gangrenous state. This was separated and removed. Upon examining this mass he found it was the sloughed appendix completely separated from all anatomical landmarks. The side of the mass was perforated and lying in the perforation was a hard body which seemed to be an incarcerated grape skin. The cavity was washed out with salt water solution and drain instituted but the patient died in forty-eight hours. He thought this anomalous condition was caused by the mesentery folding itself about the grape skin and was walled off by an inflammatory process which produced a local peritonitis. He thought it was best to open the belly in the median line when the exact site of the trouble is not made out. By doing this we can explore both sides of the cavity.

He was glad to hear Dr. Haggard take such a positive position in regard to hunting for the appendix in every case. Very often it is far better to leave the appendix alone and treat only the abscess. He mentioned the case of a boy who was sent to the hospital for operation but other work interfering the operation was postponed for a day. In the meantime the bowels moved. The next day the patient showed a septic curve and he prepared to operate but the parents refused to allow it. The boy was sent home and about a week later there was dullness in the inguinal region and up to the liver. The parents were told the boy might die unless operated upon but they still refused. About two weeks later the abscess evacuated itself in the median line. Under chloroform the cavity was found to extend from the lower border of the liver down into the pelvis, and walled off by plastic lymph exudate. It was practically an extraperitoneal abscess and the boy recovered.

DR. MOORE, in closing, said it was his practice to open the abscesses in these cases, and let the appendix alone. If later, the appendix gave trouble it could be removed but this procedure was not done as a routine thing. He agreed with Dr. Haggard's remarks on the removal of the appendix. In this case there was no pain over McBurney's point and the reason for this was that the head of the colon

had been forced over to the median line while the abscess and appendix was on the left side of the man's belly. The site for the incision was chosen deliberately in the median line. The symptoms were uncertain and all referred to the left side, yet he always felt that we have an inflammatory condition of the abdomen and are unable to make out just what it is, it is apt to be appendicitis. He has seen a number of obscure cases which, on operation or autopsy, proved to be appendicitis.

*Meeting of June 20, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

DR. R. B. H. GRADWOHL presented a specimen showing a

Hemorrhagic Infarct in Left Lung

in a patient with mitral insufficiency. The case was that of a patient 55 years of age and the kidneys showed senile atrophy. He also showed a nutmeg liver taken from the same patient. Dr. Gradwohl also exhibited a specimen of

Aortic Stenosis

in which the valves were perfectly rigid.

DR. CHARLES J. ORR exhibited specimens of

Fibromyomata

taken from the nares of a boy ten years of age. The growth seemed to be a fibromyomata but no microscopical examination had been made.

These growths are very common, he said, but this one is of rather unusual size in a child of this age. It apparently developed from the superior portion of the middle turbinate posteriorly involving the for-nix. The larger mass removed from the posterior nares on the left side. The tumor pushed the soft palate aside and pushed over the septum causing complete obstruction on one side and a good deal of obstruction on the other side. It was removed under complete anesthesia with the cold wire snare.

A Case of Valvular Disease of the Heart.

DR. ELLSWORTH SMITH presented a patient giving the following history: Patient is 29 years of age, laborer, entered the hospital on

June 4, 1901. Smokes but does not chew tobacco. Has drunk a pint of beer every day for six or seven years. In cold weather takes two drinks of whisky in the morning. Father is dead, cause not known. Mother is living; she has suffered from rheumatism since childhood until a few years ago when she was cured. Patient has had nearly all the diseases usual to childhood. Had malaria in last several months. Had syphilis about twelve years ago. Had rheumatism at twelve and has since then had an attack every winter. On inquiring into the rheumatic symptoms. Dr. Smith said this consisted only of pain without any swelling or fever. It was not an inflammatory rheumatic trouble. In November, 1901, patient had a burning pain in his chest which lasted all night. It was found that this pain was not limited to this time but had been present before and since. He also suffered from shortness of breath especially on exertion. Two weeks ago the feet and ankles began to swell. Urine 1025, with albumin present.

This history calls attention to the probable source of the trouble. There are several etiological factors of cardiac disturbance in it. There is syphilis which we know, is very prone to cause disease of the vascular apparatus. Then there are more or less alcohol and a certain amount of strain on the vascular system in his occupation. His age is of course rather against a cardiac disturbance involving the aortic opening. The other etiological factors, however, are such as would cause a disturbance of the aortic opening, especially syphilis. There is no probable source here for the mitral lesion because the rheumatic history is indistinct.

On inspection we see quite considerable pulsations of the vessels in the neck; also a good deal of impulse in the cardiac region. The apex beat is found in the seventh interspace and fully two inches to the left of the mammillary line. On percussion we find a corresponding increase of dullness to the left, both relative and complete. There is also some slight enlargement to the right. On auscultation we hear a diastolic bruit down the sternum and loudest about the fourth costal cartilage. There is also a systolic bruit heard up in the vessels. Over the apex there is another systolic bruit which extends up into the axilla. The examination of the mediastinum fails to reveal anything except a bruit which is carried up into the vessels. There is no dullness in the course of the aorta. No dullness over the descending

aorta, and none over the lungs. There is no evidence of fluid in the pleural sacs, and no ascites. There is quite a little edema of the lower extremities.

The first thing that attracts our attention is the enlargement of the heart. It is what we call a "bullock's heart." The enlargement of the left ventricle taken with the diastolic bruit makes the diagnosis of aortic regurgitation pretty clear. It is the primary lesion in this case. When we get the sounds in the vessels as we find them here with pulsation of the vessels and diastolic bruit down the sternum, which takes up the second sound of the heart, we have the characteristic signs of this trouble. The only thing that might be confounded with it is a regurgitation at the pulmonary orifice. If this were the case, however, and the aortic orifice were not involved, we could distinguish the two conditions by the absence of enlargement of the left side of the heart. While we are not apt to mistake this aortic regurgitation for some other condition, we may overlook another condition that is often associated with aortic regurgitation, that is thoracic aneurysm. Therefore in these cases of aortic regurgitation we should always look for aneurysm.

The phenomena in the vessels is important in the making of the diagnosis of aortic regurgitation. These phenomena are almost pathognomonic of aortic regurgitation for they do not occur in the thoracic aorta unless aortic regurgitation is present. In all cases of aortic regurgitation we see this undue pulsation in the vessels. Here there is a distinct thud over the aorta. This is produced by the lesion in the aorta. This is produced in the following manner: At every systole the ventricle throws the normal amount of blood into the aorta which raises the blood pressure in the arteries suddenly and causes the jumpy, upward movement of the artery. When diastole takes place there is a sudden leaping backward which causes the sudden drop in blood pressure and the artery recedes. This produces the Corrigan pulse. The reason for this peculiar pulse is that the blood regurgitates into an almost empty ventricle and there is more or less of a suction action, while in aneurysm the blood flows back more gradually and encounters a sac already nearly full of blood. It is not possible to have a Corrigan pulse without aortic regurgitation.

There are other lesions present in this case. There is a certain amount of narrowing of the aortic opening. This statement is based

on the systolic murmur heard in the aortic area which is carried into the vessels, and on the presence of a thrill in the great vessels of the neck—a systolic thrill. The principal reason for this diagnosis is, however, that the symptoms of regurgitation are somewhat modified by the stenosis. With a heart the size of this and with the amount of edema and disturbance present, we should have more disturbance in the vessels, more pronounced phenomena in the Corrigan pulse, than we have here. This is not a complete Corrigan phenomena and that is due to certain amount of aortic stenosis.

This, he said, is also another important element in the diagnosis of aortic stenosis. He did not believe that aortic stenosis can be diagnosed unless there are some modification of the vessel phenomenon. The thrill and systolic murmur in the aortic area is not sufficient upon which to base a diagnosis of aortic stenosis. If there is no regurgitation with modification of the vessel phenomena, then we must have other symptoms in order to make a diagnosis of aortic stenosis, especially a diminution and sometimes complete absence of the second sound. This is due to the complete obstruction of the aortic opening which prevents the aorta from filling completely and therefore the sound in diastole is limited. In all cases of aortic stenosis we must have this diminution, lessening, or obliteration before we can make a diagnosis of aortic stenosis.

The mitral lesion in this case, he thought, was a relative insufficiency. There is present no definite etiological factor for the disturbance in the mitral valve. We know too, that in aortic stenosis we have at some stage a disturbance of the mitral opening and this is evidenced in this case by the dyspnea and edema. This then, is a case of aortic regurgitation, with a certain amount of aortic narrowing and a relative mitral insufficiency.

The prognosis, of course, should be guarded where there is such a break in compensation as is seen here. The prognosis in aortic regurgitation before the break comes is usually good. The prognosis is gravest in mitral stenosis, less so in mitral regurgitation and in aortic stenosis it is good except for the possibility of acute dilation in overstraining. If the patient can guard against overstraining the outlook is good. There is the possibility of an anginous attack, of course, and the patient's death from angina pectoris.

The differential diagnosis is not always easy. There must be pres-

ent a good many phenomena before the diagnosis can be made and even then it may be confounded with other conditions. There are two things, however, which will aid us. We must remember that in aortic stenosis we always have a lessening of the second sound of the heart, and, secondly, we do not have the disturbance in the pulse in other lesions that is seen in aortic stenosis.

Treatment.—Our mainstay when there is a break in the compensation is digitalis. Whether the case is mitral or aortic we use this drug. The old idea that we will kill a patient with aortic regurgitation by giving digitalis is exploded. Even if digitalis does slow the pulse the benefit derived in strengthening the ventricle counterbalances any trouble we might have from an acute dilatation. We know that these cases of aortic stenosis become practically mitral cases when compensation breaks, and we deal with them as we would with mitral cases. In giving digitalis he preferred the freshly prepared infusion. With such a patient as the one before the Society he would begin with a teaspoonful and increase the dose until its full effect was seen. A practical point in the administration of digitalis is to watch the amount of urine for the twenty-four hours. Whenever there is a drop in the amount of urine passed, especially if the heart is slowing and there is increased tension in the arteries, it is time to diminish the dose or cease giving the drug, for these are usually signs of a disturbance in the heart due to overdose of digitalis. If digitalis fails, or you want a prompt effect, or the stomach will not tolerate the digitalis, strophanthus is the next best drug. If it is desired to get a special effect on the kidneys the addition of citrate of caffeine will produce this. For the dropsy as seen in this case, of course as compensation is re-established, this will disappear. If it persists, however, and the patient's condition will permit it, we might drain through the bowel either by the epsom salts method of Hay, or elaterium. He had found elaterium acts very well and has had no depression from its use. He gives it in $\frac{1}{8}$ to $\frac{1}{4}$ grain doses repeated as necessary. A dry diet is helpful in some cases. If the edema is extreme, puncturing the limbs will drain and helps the circulation. This can be done with aseptic precautions and without danger of erysipelas and tends to restore the balance in circulation. For the dyspnea when severe, and especially to give the patient rest, there is nothing better than morphine and this can be given freely. In extreme cases venesection should be prac-

ticed. He mentioned a case that had actually been snatched from the jaws of death by venesection. He took a pint of blood from this patient. Where the right heart is overloaded this gives the patient a chance to regain tone. Pepper records a case where the auricle itself was punctured and the patient saved. When all remedies fail we should try the Schott bath treatment and a certain proportion of these cases are tided over for quite a while by this treatment. One case so treated who was practically moribund when the treatment began, has been doing well for two or three years.

He said he would accentuate two points, namely, that aneurysm can not produce the Corrigan phenomena in the vessels unless there is aortic regurgitation present.* Second, the danger of making a diagnosis of aortic stenosis unless there is definite data present and especially if aortic regurgitation is present without a modification of these vascular phenomena.

DISCUSSION.

DR. P. V. VON PHUL said he was particularly glad to hear Dr. Smith's remarks on the treatment of these lesions. He was anxious to hear more of the Schott method and whether he thought the treatment indicated in a case like the one present. If not, he asked Dr. Smith to say when the treatment is indicated. He also asked about capillary pulse as a diagnostic feature.

DR. HUDSON TALBOTT said the subject was of great interest to him. He was specially glad to hear the remarks about aortic stenosis. The treatment of these cases is very important for we all have cases in which all treatment seems to fail utterly. He said he had had the pleasure of treating several cases with Dr. Smith by the Schott method in the City Hospital. He was not favorably impressed with the method. He thought that perhaps the method was deferred too long and that possibly we might get more results if we did not wait until all other methods had failed. Puncturing had been used with benefit in the cases referred to.

DR. GEORGE M. TUTTLE thought rest in connection with uncompensated heart lesions is very important. The beneficial results are quickly seen in hospital patients who are accustomed to hardship and privations. The rest they obtain in the hospital in connection with good food often enables the patient to leave the hospital perfectly well so far as he is aware. He thought it important to keep the pa-

tient flat on his back and thus prevent the heart from doing any extra work.

DR. SMITH, in closing, said the Schott method, as far as we are to see at present, does nothing but restore compensation in a certain number of cases, but we have no evidence that it accomplishes this better than other methods. Therefore he did not resort to the Schott method when other means would give results. It is irksome and difficult to carry out and hard to gain the patient's consent for any length of time. He relied upon the older methods until he saw that they had all failed and then he tried the Schott baths. In a limited number of cases this method is useful. Dr. Talbott's experience was discouraging because they had taken patients in the last stages of broken compensation. He favored puncturing early in these cases, or whenever the tension in the arteries became great. No harm results from the procedure as under aseptic precautions there is no inflammatory trouble or erysipelas following. It certainly makes the patient more comfortable, especially where the genitals are distended.

The matter of rest is a question often hard to decide, but in cases of acute failure of compensation rest is indicated. In chronic cases, however, he would doubt the propriety of absolute rest. A part of the Schott treatment is graduated exercise, that is training the heart gradually to do more work. This is the object sought in mountain climbing. In chronic cases systematic exercise is beneficial. He had gotten some good results from the Schott method. A young girl with a mitral insufficiency and failure of compensation was in such an extreme condition it was a question whether she could be handled without dying and they did give up all hope. In her case it was astonishing how she improved under the treatment. After the second bath she could rest well. Still he did not believe that compensation effected by the Schott method was any better than when secured by the older methods. While it will restore compensation in a certain proportion of cases, yet he did not think the number was great enough to justify its employment in preference to the older methods and begin the treatment early. A counter indication for the Schott treatment is extensive renal disease. He used cardiac tonics in connection with the Schott treatment in a certain proportion of cases. The Schott method will assist other methods and reaches some cases which do not respond to other treatment.

THE BETHESDA PEDIATRIC SOCIETY.

*Meeting of October 25, 1901; Dr. John Zahorsky,
President, in the Chair.*

Dr. W. L. JOHNSON read a paper on

Infant Feeding In Difficult Cases.

Every individual infant requires special study. Infants placed upon an artificial food at birth are less liable to digestive disturbances than those who have been breast fed for some time. The adaptation to the new food seems to be more rapid in the newly born.

When casein causes digestive disturbances, we must have recourse to whey. Whey may be given pure, or cream may be added. Whey made with essence of pepsin is said to contain more fat than when rennet is used. A good method is to take off "top milk," make whey from the lower milk, then mix it with the top milk.

In the acute fevers of infancy pure milk can not usually be given. Whey mixtures and peptonized milk are indicated.

In malnutrition, marasmus, and in various chronic forms of indigestion, the predigestion of milk, or the internal administration of digestants reaps the most signal results. A case was reported in which all modifications of milk, including whey and partially peptonized milk and a wet nurse's milk caused increasing emaciation and dyspeptic symptoms, but rapidly recovered when it was placed on equal parts of milk and water, peptonized fifty minutes. In that form of malnutrition in older infants and children, characterized by anorexia beef juice and broths should be given. A steamed tender squab is very appetizing.

In marked acidity from cow's milk, some patent starchy food is a corrective. In some cases undiluted cow's milk gives the best results. Excessive proteids in human milk causing colic and digestive disturbances are best treated by the internal administration of digestants. Pepsin or pancreatin should be given.

In constipation one or two feedings of malted milk usually relieves.

DR. TUTTLE.—In all acute diseases the use of an artificial food adds decided difficulties in managing the infant; but simple digestive

disorders are often more easily cured in bottle-fed babies than in those fed on the breast. One example is colic; another is constipation.

Dr. Tuttle reported an intractable case of constipation, which had been treated by all kinds of purgatives without result. The condition was promptly and permanently relieved by giving one bottle of diluted "top-milk" once a day, along with the regular nursings.

He was glad to hear the digestants recommended for colic in breast fed infants, as he also obtained good results from them. In colic due to excessive proteids they seem to act better than anything else. In modern mothers high proteids are exceedingly common. Yet these colicky babies thrive better than those who do not suffer from colic. The explanation seems to lie in the fact that the former get a greater food supply.

Dr. LIPPE.—In artificially fed infants an increase in the percentage of fat usually relieves constipation. In breast-fed infants one or two bottles of malted milk given daily acts very well.

Dr. WOODRUFF.—The treatment of constipation, as all other disorders, calls for treatment of the individual rather than a regular routine. The diet and in particular the amount of fat is to be regulated, but aside from that, the addition of water to the daily dietary, either plain or sweetened, will sometimes work wonders, bringing about a freer and more natural evacuation of the bowels.

Dr. GORIN.—Some prepared foods act similarly to malted milk in relieving constipation. When an infant does not gain in weight, an attempt to increase the proteids should be made cautiously, since a rapid increase may lead to disastrous results.

Dr. ZAHORSKY.—In acute gastroenteric infection peptonized milk must be used with great caution, since the albumoses are excellent culture media for bacteria and in excess irritate the intestinal mucous membrane. American pediatricists do not recommend peptonized milk in marasmus except in some special cases. The best results in this disease is obtained by using a dextrinized gruel as a base (the partly dextrinized flour made by parching it in the oven is excellent) and adding to this whey and a little peptonized milk. Small quantities of albumose stimulate absorption, but pure peptonized milk should not be used.

In the digestive disturbances of breast-fed infants nothing has served me so well as giving one or two ounces of a food rich in

starches and dextrin before each nursing. Severe and persistent colic may be relieved by this method. The gases which reduce the severe intestinal pain are evidently caused by bacterial growth, and the dextrin inhibits their activity.

The constipation in breast-fed infants is peculiar in that the stools are nearly always very soft. The most reasonable explanation of the constipation is that the stool, in which the bacillus acidophilus grows has not sufficient stimulating properties to the lower bowel. By giving a little milk or other food daily the intestinal flora is changed, different decomposition products are formed, and these stimulate the rectum sufficiently to relieve the constipation.

DR. GORIN reported a case of

Perinephritic Abscess.

The patient was a boy 9 years of age. He had always been healthy and suffered from few of the ordinary diseases of childhood. Eight months before he had a severe cellulitis of the arm. When first seen the child had been sick four days; he complained of headache, backache, and chilliness; fever was present, and he suffered from severe sweating at times; he felt nauseated; only on deep pressure could any tenderness be detected at the first examination; this tenderness was equally as marked over McBurney's point as it was over the ilio-costal region posteriorly.

The thigh was flexed and the patient stood bent forward and to the right; the urine was normal and showed no pus or blood; and for the next six days the temperature ranged from 101° to 102°F.

Marked dullness was discovered on percussion in the ilio-costal space; the presence of pus was suspected, and was demonstrated by aspiration.

An incision was made into the abscess and about 500 cc. of thick yellow pus evacuated. The wound was packed with gauze and remained opened for two weeks. Recovery was prompt.

At the time of the operation it was discovered that the abscess surrounded the kidney. No possible cause of the disease could be elicited.

DR. HOFFMAN.—The lameness present early in the case reported is of more than passing interest. Irritation and contraction of one or both psoas muscles, that occasionally accompanies inflammation of ab-

dominal viscera, causes gait and posture closely resembling hip-joint disease. In these cases examination of the range of motion at the hip will show that it is free in all directions except extension, which is lessened by the contracted psoas. The other muscles about the hip are soft and relaxed. A number of such cases have come under my observation.

Recently a patient was referred to me by a competent surgeon of this city, who in a hurried examination diagnosed hip-disease; at the first glance I assumed the diagnosis to be correct, but noticing that the child looked very sick and had a temperature of 102.8°F. , I asked how long the limb had been effected; the reply was two weeks. As I knew that such high temperature and severe deformity rarely occurred in the first two weeks of tuberculous hip-disease, and that the child would not be able to walk at all if an acute suppuration was present in the joint, I examined the hip-joint carefully and ascertained that all movements were normal except extension, and that all other signs of hip joint disease were absent; the trouble was probably a perinephritis. Rest in bed and traction to the affected limb was followed by recovery in four weeks.

In another case of "contracted hip" in a woman sent to me as a case of hip-joint inflammation, I made a diagnosis of psoas contraction due to abdominal disease and recommended an abdominal surgeon be summoned. She was subsequently operated upon and a quantity of pus removed from the abdomen.

My attention has been called to this same condition in several cases of appendicitis.

DR. ZAHORSKY.—Gibney, in 1880, made a special study of perinephritis in children and reported about twenty four cases. All these patients had been sent to his clinic as cases of hip-joint or spinal disease. He called particular attention to this disease being mistaken for hip-disease; the disease occurs in children from 2 to 15 years of age; sometimes it follows direct injury; more often no cause can be assigned; in about one-half of the cases, resolution takes place without suppuration; when suppuration occurs the evacuation of the pus is followed by a fall in the temperature and rapid recovery.

REPORTS ON PROGRESS

MEDICINE.

In Charge of W. M. HOGE, M.D.

The Etiology and Classification of Cirrhosis of the Liver.

Victor A. Vaughan (*Journal American Medical Association*, October 5, 1901) regards the two recognized forms of cirrhosis of the liver, the atrophic and the hypertrophic, as quite distinct, clinically and pathologically. The atrophic form never being, as has been claimed, the final result or outcome of the processes producing the hypertrophic form.

On the contrary, the atrophic form is probably atrophic from the beginning. It is usually the result of alcoholism, but may occur in consequence of chronic poisoning by phosphorus, lead, copper, etc.

Degeneration of the hepatic cells is the primary phenomenon, and shrinkage of the acini and consequent contraction of the liver is secondary to this.

In hypertrophic cirrhosis the liver is always enlarged and may be enormously so.

There has been practically no scientific investigation into the causative agents concerned in the production of this disease, but most clinicians agree that it is of infectious origin. While it may occur in alcoholics, alcohol is not a direct causative agent. There is no sufficient reason for believing that any chemical poison except bacterial toxins are concerned in its causation.

It frequently begins like an ordinary catarrhal jaundice, which seemingly becomes chronic. It is often, if not invariably accompanied by cholecystitis; it is essentially a febrile disease with periods of remission and exacerbation; it is accompanied by enlargement of the spleen and lymphatics, and the splenic enlargement is not due to obstructed flow, as in atrophic cirrhosis, but appears to be similar to that observed in other infectious diseases. The primary changes occur in the epithelium of the bile-ducts.

Histologically, there are no destructive changes in the hepatic cells. Ziegler says that probably there is a proliferation of these cells, and that the colossal size reached by the liver is partly due to this, and not solely to proliferation of the connective tissue.

Hypertrophic cirrhosis most frequently appears in persons under 40 years of age. Enlargement of the liver and icterus are the first prominent symptoms; ascites is rare, and not prominent when present. The disease generally runs a chronic course, with exacerbations and remissions, accompanied by rise and fall of temperature. With the progress of the disease anemia and emaciation occur, and toward the close the patient may pass into a typhoid condition with marked fever and delirium.

While the two conditions are thus distinct and readily distinguishable, cases do occur in which they co-exist, and these mixed forms may give rise to considerable difficulty in diagnosis.

In the treatment of the atrophic form, the most important points are to stop alcohol and reduce the amount of food to a minimum, limiting the diet to milk, or milk and eggs. Treatment in other respects being adapted to symptoms.

In the treatment of hypertrophic cirrhosis, small doses of calomel administered according to the method of Nothnagel have probably given best results. When there is obstruction of the common duct, or when there are stones in the gall-bladder, surgical operation is clearly indicated, and the author is inclined to the opinion that the time will come when surgery will be relied upon in the treatment of all cases of hypertrophic cirrhosis, as a means of reaching and disinfecting the biliary passages.

Acute Delirium.

M. Carrier, in a paper read before the Eleventh Congress of French Alienist and Neurologists (*La Progres Medical*, August 11, 1901) considers it as fairly well established both from the clinical history and pathology of this condition, that it is of infectious origin.

A variety of bacteria have been obtained from the blood and other fluids of the patients, so that it does not apparently owe its origin to any one, specifically.

Congestion and edema of the brain and cord are found post mortem; also foci of active inflammation and necrosis. The nerve cells and fibers show changes of a degenerate character, consequently it effects

the whole nervous system, and is not limited to the brain. It may occur primarily, or be secondary to a pre-existing psychosis.

Three conditions seem requisite for its production, a neuropathic predisposition, diminished resistance and bacterial infection.

M. Carrier concludes that acute delirium is a syndrome of a toxic infectional nature. It is not a single morbid entity in a nosological sense, but is dependent upon various forms of infection. It has its point of departure in an alteration of the nervous elements by the pathogenic agent, following which is an involvement of the entire organism by secondary auto-intoxication.

The problem for the future is to determine the nature of the various infections, and to explain the method of their action.

M. Regis has observed hysteriform and epileptiform attacks during the prodromal period. The cephalalgia and fever are of importance in distinguishing acute delirium from the functional psychoses.

M. Ronbinovitch observed a case of acute delirium in which, during the prodromal period occurred a paranoiacal condition, resembling the acute paranoia of German authors.

Following septicemia from an abscess of the breast, the patient developed delusions of grandeur, and of persecution on account of her wealth and distinguished name. On the third day delirium of the ordinary form developed, and six days after she died.

NEUROLOGY.

In Charge of W. A. BLISS, M.D.

A Case of Progressive Muscular Atrophy and Tabes, with Autopsy.

The *Journal of Mental and Nervous Diseases*, October, 1901, contains an abstract of a paper read by Dr. Joseph Collins before the American Neurological Association, in relation to a case described by above title.

Atrophy affected both upper and lower extremities and was fairly typical, progressive muscular atrophy of spinal origin.

Examination showed (1) the atrophy; (2) pin point pupils, immobile to light; (3) absent knee-jerks and ankle-jerks; (4) slight increase of myotatic irritability in upper extremities; (5) absence of objective sensory disturbance and of tenderness on deepseated pressure; (6)

diminution of galvanic irritability in atrophied muscles, but no reaction of degeneration. The disease steadily progressed eight years, bulbar symptoms preceding death.

Pathological findings: (1) Degeneration of posterior columns, most pronounced in the columns of Goll and in the ventral field of the column of Burdock, extending from the lumbar cord to the muscle in the medulla; an ascending degeneration; (2) degeneration of the crossed pyramidal tracts, most marked in the lumbar cord, least evident in the dorsal, relatively slight in the cervical, but easily detected in the oblongata. The uncrossed pyramidal tracts were not affected; (3) comparatively slight changes in the ventral gray matter.

The contour is normal; the cells, though few in number, do not show any inherent alteration of structure, nor is there evident disease of any constituent of the ventral cornua (4) Relative preservation of the cells of the posterior ganglia; many of the posterior ganglion root-fibers are degenerated. (5) Profound pathological alteration of the voluntary muscles, parenchymatous and enterstitial degeneration. (6) Interstitial degeneration of all the nerves examined, the musculo-spiral ulnar, popliteal, sciatic, etc.

From one-fifth to one-third of all the nerve fibers are in a state of extreme degeneration.

Chorea; Especially in Relation to Rheumatism and Endocarditis.

H. B. Tavill (*Medicine*, September, 1901) discussing this relationship, cites the fact that only from eighteen to fifty per cent of chorea bears a definite sequence to arthritis according to the mass of statistics; but he doubts whether arthritic manifestations are always noted when present and we must account for several factors.

1. The decided heredity of chorea; 76 per cent of neurotic family history.
2. The preponderance of association of chorea with what we clinically call rheumatism, including predisposing factors.
3. The various toxic relations not only of chorea but of rheumatism, now thought not to be septic.
4. The most obscure, the fact that clinically distinct chorea has followed upon emotion and fright, at times immediately, in cases sufficient to demand explanation.

We are dealing with related conditions and the probability is they are infective. Endocarditis, chorea, and arthritis are co-ordinate manifestations of diseased conditions, peculiar to the young in that order and an important element in causation is infection.

The coincidence of chorea with rheumatism deserves an essential rather than incidental interpretation.

A Plea for the Broader Treatment of Epilepsy.

William P. Spaulding (*Buffalo Medical Journal*, October, 1901) says: Epilepsy is essentially a disease of early life. Epilepsy, alcoholism, insanity and tuberculosis in the parents, to a less extent syphilis and rheumatism, predispose to the disease in the offspring. External violence, hemorrhage within the brain, psychic shock, and chemical poison, may produce the disease without heredity but are more liable in those predisposed.

Eighty-five per cent of epileptics acquire the disease before 20.

The four factors in heredity, epilepsy, alcoholism, insanity and tuberculosis, in addition to the cerebral palsy cases of early life, constitute 67 per cent.

These facts teach the time to treat the disease is when the epileptic is young. Much of the surgical work done for the relief of epilepsy should not be done and the duration and character of the attacks and especially heredity should be carefully considered.

Some cases can be cured and fully 75 per cent may be benefited under systematic and long continued treatment.

SURGERY.

In Charge of

A. V. L. BROKAW, M.D., and E. C. GRIM, M.D.

The Blood Changes Induced by the Administration of Ether as an Anesthetic.

DaCosa and Kalteyer (*Annals of Surgery*, September, 1901) make an important contribution to the study of the blood changes induced by the administration of ether. They refer to the fact that it was formerly asserted that the administration of an anesthetic has a destructive influence upon the blood. It has been asserted that many blood corpuscles were destroyed, that the hemoglobin was diminished, and the white blood corpuscles show irregular changes.

Hamilton Fish is quoted who affirmed the question of hemoglobin reduction. He also believed that anesthesia may lessen tissue resistance, and thus lead to septic lesions; he urged that an anesthetic not be given when the hemoglobin is less than fifty per cent.

The writers after studying fifty cases before and after anesthesia, arrive at the following conclusions:

The number of red corpuscles is influenced by many factors associated with and accompanying the anesthetic state. The character of this change is, as a rule, a polycythemia; rarely, an oligocythemia; this is best explained by a lessening of the watery elements.

The hemoglobin is always reduced absolutely. Increased hemolysis is produced by the anesthesia.

Whenever the percentage of hemoglobin is low, if an operation is determined upon, the ordinary preparatory measures should be modified in every way, in order to avoid creating an undue drain upon the blood. An experienced man should give the anesthetic; as little as possible should be given; in many instances oxygen should be combined with it; the operation should be performed rapidly.

Frequency of Recurrence of Sarcoma.

Wyeth (*Ibid.*) finds that of eighty-three cases of sarcoma which survived the operation, fifty-one, or sixty-three per cent, ended fatally by recurrence. But even this percentage of recurrence is low, as too little time has elapsed in most cases reported. Recurrences occur mostly in the lung; he reports a case in which he believes the recurrence was prevented by the induction of an infectious process; he concludes that the streptococcus toxemia either erysipelatosus or pyogenic has an inhibiting influence upon sarcomata, and since, almost without exception, in cases not subjected to infection recurrence is the rule, I am of the opinion it should be practiced whether or not the case is operable. When an extirpation or complete removal of the part involved by amputation has been made, infection should be induced, and repeated at intervals not longer than six months for at least six years after operation.

Fracture of the Skull.

Lathrop (*Ibid.*) wants to emphasize the importance of early operation in certain cases of fracture of the skull. He briefly reports thirty-five cases operated upon. In all injuries to the skull damage to

the brain is of first importance. The general treatment of fracture of the skull, whether compound, depressed or comminuted, should be by operation. In all simple fractures where the slightest indication of intracranial hemorrhage is present, operate; even simple fractures, followed by no symptoms need watching and special care given to the general symptoms. The prognosis must be guarded; a subnormal temperature followed by a rapid rise is a bad sign; coma, paralysis, deep, irregular breathing, and dilatation of the pupil are nearly always of fatal significance. A temperature at or above the normal with regular respiration and a full and slightly accelerated pulse is usually favorable.

OPHTHALMOLOGY.

In Charge of W. A. SHOEMAKER, M.D.

Exterpation of the Superior Cervical Ganglion of the Sympathetic in the Treatment of Glaucoma.

Zyche and Axenfeld (*Tympathicus-Resektion Beim Glaukom* Halle. A S, 1901; *Oph. Record*, June, 1901) after an admirable discussion of this subject and a complete analysis of the literature and the cases reported up to date, come to the following conclusions, which, somewhat condensed are here reproduced:

1. Extirpation of the sympathetic—that is, extirpation of the superior cervical ganglion, as well as resection of the sympathetic nerve—in the hands of competent surgeons is a comparatively safe procedure. Among seventy-four cases of glaucoma submitted to this operation there was only one fatal result. Detriment to the eye is up to this time not positively proved.

2. If the material at present available does not suffice to pass judgement upon the durability of this procedure, it still permits it to be said that a certain number of glaucomatous eyes can be improved for many months by such resection, while in other cases a checking of the progress seem to have been obtained. It is quite impossible to prophesy that extirpation of the sympathetic will be of any advantage in each case, but it is not certainly proved that it will occasionally do harm. When the operation has been followed by a good result this in the majority of cases has remained, whether permanently or not can

not be stated. It is rare that a primary improvement gives place to a late relapse.

3. Referring to the different forms of glaucoma, the following may be stated: (*a*) In acute inflammatory glaucoma resection is to be rejected, except when iridectomy is declined, or when on the first eye the operation has resulted badly; that is to say, when, in spite of the iridectomy, the glaucoma continues or relapses. (*b*) In hemorrhagic glaucoma resection is a proper procedure. (*c*) In chronic inflammatory glaucoma and in simple glaucoma a number of good results have been observed. Resection is therefore worthy of recommendation as a supplement to iridectomy in progressive cases.

4. Extirpation of the sympathetic for non iridectomized eyes is, in general terms, not suitable. Resection should not, even in chronic and simple glaucoma, supplant iridectomy. Iridectomy holds the first therapeutic place. Extirpation of the sympathetic without previous iridectomy appears permissible only when iridectomy or sclerotomy is refused, when iridectomy has resulted unfortunately in one eye, in hemorrhagic glaucoma, in those cases of simple glaucoma where a very great disturbance of vision already exists; and perhaps also in hydrophthalmos, although in this disease multiple sclerotomies are to be considered.

5. In absolute glaucoma extirpation of the sympathetic is indicated only when the blindness has existed for a short time, or when the disease is effecting the last eye. If complete blindness has existed several weeks, and severe pains are present, enucleation is indicated, and only when this is declined extirpation.

6. Inasmuch as after extirpation glaucoma continues in some cases, and, furthermore, as inflammatory attacks may appear after this operation, it is wise in the after-treatment to continue myotics.

7. Whether extirpation of the sympathetic can prevent glaucoma has not been safely established.

8. Anatomical examination of the excised ganglia shows changes which, while not characteristic of glaucoma, are worthy of farther investigation.

9. The final conclusion is that in all cases in which our hereto employed therapeutic measures are not effective, extirpation of the cervical sympathetic is a measure justifiable and worthy of employment, even if improvement is not certainly to be expected from the operation.

NOTES AND ITEMS.

A McKinley Memorial.—Dr. Knopf suggests that a seaside sanitarium with a pavilion for every state, for the treatment of American children from tuberculous and scrofulous disease or predisposed to consumption, be erected as a memorial to our lamented president. "Our good McKinley had two children and these lost. He dearly loved little children, and the creation of a sanatorium for the treatment and prevention of disease with which so many American children are afflicted would surely be a fitting memorial to this great man and lover of children."—*N. Y. Medical Journal*.

Etiology of Chorea Minor.—Chorea is another disease which has followed rheumatism in being added to our list of infectious diseases. Such etiological factors as fright, and the strain of modern school life, are only incidental causes. There can be little doubt that the influence of a fright has been greatly exaggerated; formerly the chill at the onset of pneumonia was connected with the cause of the consolidation in the lungs, but it is now known that the chill is only a symptom of the disease. Similarly, a fright, sometimes induced by very trivial cause, must be regarded as a symptom rather than a causative factor of chorea.

Duration of Life of the Sot.—It is said that in serious cases of the drinking habit, the average duration of life is about fifteen years; the duration of life among moderate periodical inebriates is about nineteen years. The capacity to get drunk more than a thousand times is rare. The maximum capacity for any man during ten or fifteen years is about two thousand gallons of whisky.

"Journal of Military Surgeons."—This is the newest publication. It is to be issued quarterly, and is the official journal of the Association of Military Surgeons of the United States. The journal will publish not only the proceedings and all the papers of the annual meetings, but will also present timely contributions upon military medicine and surgery in the intervals between the meetings; abstracts of all important contributions in its field, published in other journals, will be given. It will endeavor to keep every member of the Association continually informed upon all phases of military medicine and surgery.

The Healthiest Cities.—According to the mortality statistics collected by the Census Bureau, St. Joseph is the healthiest city in the United States among cities having a population of 100,000 or more ; its death rate in 1900 having been 9.1 per thousand. St. Paul ranks next with 9.7.

Koch's Theory Corroberated.—According to the *American Medicine*, recent experiments made by the New York Board of Health corroborate the theory of Koch that cows and calves are not easily infected by tubercle bacilli obtained from a human source.

The Precancerous Stage of Cancer.—The *Medical Review of Reviews* offers the following as the most frequent precancerous conditions:

Cancer of the lip.—Leukoplakia of the mucous surface of the lip, fissure, syphilitic ulcer.

Cancer of the tongue —Abrasion by a rough tooth, ichthyosis, so-called, traumatism, syphilitic ulcer.

Cutaneous cancer.—Cutting of a wart by shaving, wound of skin by tooth of a comb, plaques of chronic eczema, psoriasis.

Cancer of the breast.—Eczema of the nipple Paget's disease, fibroma, cystoma, cicatrix and induration from an acute mastitis.

Cancer of the uterus. —Laceration of the cervix.

Smallpox in the United States.—According to the Public Health Reports, during the period from June 28, 1901, to October 18, 1901, 12,782 cases of small-pox were reported from various States to the Surgeon General Marine Hospital Service. Of this number, 303 died, a mortality of 1.3 per cent. In the corresponding period of 1900, 4,337 cases with 96 deaths were reported, a mortality of a little more than two per cent. It seems that there is a continual increase of this disease throughout the country ; fortunately the death rate is small.

Election of Officers.—At the annual business meeting of the Alumni Association of the Washington University Medical Department held October 28, 1901, the following officers were elected for the ensuing year; President, Dr. L. H. Behrens ; Vice-president, Dr. W. E. Sauer ; Treasurer, Dr. Philip Hoffman ; Recording Secretary, Dr. W. L. Johnson ; Corresponding Secretary, Dr. Hall.

The First Egyptian Congress of Medicine.—The great activity in medical congresses is spreading over the whole world. The first Egyptian Congress of Medicine will be held in Cairo from the 10th to the 14th of December, 1901. The work of the Congress will be especially concerned with diseases peculiar to Egypt.

The Bubonic Plague.—Numerous foci of the plague are reported at Naples, Italy; several new cases occur daily at Rio Janeiro; at Manilla forty-two cases were reported during the month of August; Eleven cases have been reported in Egypt.

Death of Dr. Woodbridge.—Dr. J. E. Woodbridge, of Cleveland, Ohio, died recently at the age of 55 years. He was an ardent advocate of the antiseptic treatment of typhoid fever, and the originator of the antiseptic treatment which goes by his name.

A New Era In Military Medicine.—The Spanish-American War has brought in its train a vast number of momentous problems. The Military Surgeons of the United States have determined to solve these problems, and the issue of a special publication devoted entirely to military medicine is in accordance with this purpose. Hand in hand with the enormous progresss and extension of fighting machines, an advance in the prevention of camp diseases would be most timely.

Institutionalism.—The establishment of institutions for the care of the dependent class has assumed such enormous proportions throughout the civilized world that special studies of this subject are now being made. This forms a science in itself. At the last meeting of the American Academy of Medicine, many contributions to various phases of this subject were presented; the use and abuse of institutionalism was thoroughly discussed. While this movement in one sense is the outgrowth of the altruism of the age, in another it may be viewed as an additional division of labor; it has been found that those specially trained to the care of the helpless and diseased can take charge of them cheaper and with a better ultimate result than the ordinary individual. The family no longer supports and cares for its insane, blind or paralytics, except indirectly; this duty being assumed by some institution especially controlled for such work. Institutionalism must be regarded as one of the great advances of modern times.

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ORIGINAL CONTRIBUTIONS.

Primary Abdominal Tuberculosis.

By LAWRENCE F. FLICK, M.D.,

PHILADELPHIA, PA.,

BY primary abdominal tuberculosis, I mean tuberculosis in which the first colony locates in some tissue or organ within the abdominal cavity; or in other words, tuberculosis which begins in the belly.

It has generally, in the past, been believed by the medical profession, that tuberculosis usually begins in the lungs, and that when a colony forms in the abdominal cavity it is secondary to a prior colony in some other part of the body. This belief is no longer tenable. The surgeon and the pathologist have discredited it.

That primary tuberculosis of the tissues and organs within the abdomen exist can not now be doubted. How frequently tuberculosis begins in the abdomen is still problematical. Medical journals and transactions of pathological societies are rich in reports of cases of primary tuberculosis of various tissues and organs within the abdomen, practically including tuberculosis of every tissue and organ in that cavity. The tissues and organs involved which may be found in such re-

Read before the Medical Society of the State of Pennsylvania at Its Fifty-first Annual Meeting, September 15, 1901.

ports are the mesenteric lymphatic glands, the peritoneum, the tubes, the ovaries, the kidneys, the uterus, the suprarenal capsules, the ureters, the bladder, the liver, the spleen, the pancreas, the appendix, the intestines, the gall-bladder, and the stomach. In addition to the many reports, we have some special studies which give a flood of light. The most valuable of those which have come to my knowledge was made by J. Whitridge Williams at Johns Hopkins in 1892. Dr. Williams made a careful study of 169 cases of celiotomy in which the tubes and ovaries had been removed for various causes. In the 169 cases he found eight cases of tuberculosis of the tubes or ovaries or of both, and in only two of the eight cases was there macroscopic evidence of tuberculosis; nor had there been clinical evidence of tuberculosis in other parts of the body. Moreover tuberculosis was only found in the inflammatory cases of which there were 96 out of the 169.¹ It is interesting to note how well Dr. William's findings fit in with the classical dictum of old women that a young girl with leucorrhea may run into decline. Another interesting statistical study from another standpoint is that of Israel of Berlin, reported in 1897. Dr. Israel tabulated and analyzed his surgical work on the kidneys and drew the conclusion from this study that one-third of all cases of kidney trouble in which there is retention or pus are tubercular, and that one-fourth of all such cases are primary tuberculosis of the kidneys.² Venturing a calculation upon the data at hand, it is probably not going far astray to say, that 25 per cent of all cases of tuberculosis begin in the belly.

A most interesting speculation in connection with this subject is how the tubercle bacillus gets into the belly and is implanted in the tissue or organ involved. Most men who have written upon the subject would have us believe that the bacillus first colonizes either upon an abraded surface of the intestine or upon an abraded surface of the reproductive organs and from the small colony formed in such places is carried by the blood into other tissues or organs, or travels into other organs or tissues by invading contiguous territory. This undoubtedly is the method which first suggests itself to one's mind. It is, however, inconsistent with the anatomy and physiology of the human organism and the biology of the tubercle bacillus. The natural ports of entry into the body for solids are the lymphatic system and the alimentary canal.

The lymphatic system reaches into every part of the body and carries the substances which it takes up into lymphatic glands whence, if not destroyed or used up, it ultimately carries them into the thoracic duct and thence into the blood. The alimentary canal through its lacteals and lymphatics takes up substances which are small enough to be taken up, and carries them either directly into the blood through the thoracic duct or into the mesenteric lymphatic glands, there to undergo some change, or to be conveyed thence into the blood through the thoracic duct. The tubercle bacillus requires a definite temperature, specific food and rest for colonization. It is almost inconceivable how colonization could take place on an abraded surface of the intestine with the constant motion that goes on in the intestines and with the secretions and contents of the intestines constantly passing over the colony.

It would be much more in harmony with our knowledge of the anatomy and physiology of the human body and the biology of the tubercle bacillus, to assume that the tubercle bacillus gets into the system through the lymphatics and the lacteals, and that so far as the abdominal cavity is concerned it may colonize in the mesenteric lymphatic glands when carried there from the intestinal canal, or in any of the tissues or organs of the abdominal cavity which have a blood supply when carried to them by the blood current. This view also explains to us why an organ or tissue which has been injured by either traumatism or inflammation is prone to become a nidus for tubercular colonization. Because of impeded circulation in an injured organ or tissue the tubercle bacillus is more likely to be arrested in that organ or tissue than in a healthy organ, and once arrested, to colonize.

The diagnosis of primary abdominal tuberculosis is exceedingly difficult. The symptom-complex by which the disease can be recognized when it affects the different tissues and organs in the belly are yet to be described. Abdominal surgeons are our best diagnosticians in these cases, and it is to them that we must look for a record of the symptom-complex. All that the physicians can do at present is to look with suspicion on every case of chronic indigestion, biliousness, constipation, diarrhea, abdominal pain or tenderness, bladder disturbance, leucorrhea, and persistent backache, when accompanied by circulatory disturbance and loss of weight. In some forms of intra-abdominal tuberculosis a diagnosis can be

positively made, when the disease has advanced to the breaking down stage, by a microscopic examination of the discharges. This applies best to tuberculosis of the kidneys, but may also apply to tuberculosis of the uterus, tubes and ovaries. Injection of tuberculin for diagnostic purposes may be resorted to when the symptoms point to tuberculosis but are too meagre to warrant a conclusion. Sometimes light can be thrown upon a case by treatment. A case in point will illustrate this. A young girl, 17 years of age, whose father I had been treating for tuberculosis, was brought to me by her mother because she wet the bed at night. She had been doing this for years and had been under treatment for it by a number of physicians. She was tall, thin, pale and had marked circulatory disturbance but apparently no fever. I treated her for some weeks with the usual remedies for her ailment with absolutely no effect. I could find no evidence of tubercular deposit in the lungs, nor could I elicit symptoms which showed the presence of tuberculosis anywhere. The examination of the urine was negative, but there was an accentuation of the second sound of the heart and a rapid pulse, showing heart fatigue and a possible obstruction to the circulation somewhere. I learned, moreover, that there was frequent micturition during the day-time, and concluded from this that the trouble was more deep-seated than mere habit. I dropped all treatment directed to the trouble itself and placed the patient on a building-up treatment. She at once began to gain in weight and as she gained in weight her trouble gradually began to decrease. She now has been under treatment over five months and is nearly well of the trouble for which she consulted me although her circulation is not yet normal, nor is she at a normal weight. The treatment in this case has led me to believe that it is a case of tuberculosis of the abdominal cavity, probably renal in character.

The treatment of intra-abdominal tuberculosis is as yet an unsettled question. Up to the present time it has been in the hands of the surgeon chiefly and sometimes has been accidental. Opening of the abdomen without removal of any of the diseased tissues has in some cases proven curative. How a cure takes place in such cases is purely speculative. Until very recently surgical interference has been the only procedure which has had any advocates. The recommendation has been to remove diseased organs which can be removed, and if or-

gans can not be removed, to open the abdomen and dust the peritoneum with iodoform. Quite recently more conservative treatment has been recommended by competent authority. According to such authority building-up treatment with rest promises better results than surgical interference. In the beginning of this year, I. Burney Yeo published an address in which he advocates the use of iodoform inunctions into the abdomen and internal administration of iodoform and creosote for acute tubercular peritonitis, and relates some cases illustrative of his treatment. His method of treatment is worthy of a trial. As our knowledge about intra-abdominal tuberculosis will increase we will no doubt find that success in treatment depends upon early diagnosis and the establishment of vigorous treatment before mixed infection has set in.

¹Medical News, Vol. LXI, p. 70.

²Deutsche Medicinische Wochenschrift, Vol. XXIV, p. 442.

Double Bell's Palsy.

By FRANK R. FRY, A.M., M.D.,

ST. LOUIS, MO.

MAY 20, 1901, a man 45 years old, consulted me with a diplegia facialis of an interesting nature. He gave the following history: Wednesday, (May 8th) he felt considerable aching in the left side of his head, face and neck. It seemed to radiate from the occipital region, which was especially painful and somewhat tender or sore to touch. He also noticed that the pain occasionally focused over the left eye and about the ear. Although suffering a great deal he remained at work. Sunday, (May 12th) he felt a stiffness in the upper lip and noticed a difficulty in spitting. Monday, (May 13) on awakening in the morning he found the left side of his face totally paralyzed. On about the 14th (he is not quite positive about the day) he noticed the same kind of an aching invading the right side of the head and face that he had experienced in the left; and the greatest intensity was in the occipital region just as it had been on the other side. The pain never was so severe, however, on the right side as it had been on

the left. Within a few hours after the beginning of the pain this side of his face became paralyzed also. When I saw him first the paralysis on the left side was, therefore, a week old and that of the right four or five days.

With this history there could hardly be a question about the diagnosis, although a double Bell's palsy (*i. e.*, a simultaneous, complete, peripheral paralysis of both seventh nerves) is a very rare occurrence. A facial diplegia is most often due to disease within the cranial cavity, especially at the base of the brain or in the pons and is then accompanied by other cerebral symptoms which indicate its central origin.

Cases occurring in the course of a general neuritis following some acute infectious disease have been mentioned. And, finally, a double facial paralysis has, in rare instances, resulted as a complication of bilateral middle-ear disease.

In our case there were no symptoms of intracranial or middle-ear disease. The movements of the soft palate and the taste sense were not disturbed as is the case when the nerve is affected in its course through the aqueduct of Fallopius. The distribution and character of the pain and the manner in which the paralysis followed were very characteristic of the peripheral or neuritic type.

The usual cause of Bell's palsy is exposure to cold, rheumatism, etc. Our patient had been checking freight out-doors on a railway platform, conscious that he was not sufficiently clad and that he was catching cold. He had never had rheumatism nor any very pronounced gouty signs, although he confessed to an occasional stiffness and slight pain about the shoulders and elbows in recent years, and remembered various occasions on which some one or another of these joints had been especially painful. In this connection he volunteered a statement of interest, namely, that for the past year he had noticed fibrillary twitchings in the left upper eye-lid. On several occasions it had been so persistent and emphatic as to annoy him and was frequently visible to other persons. The fact of this twitching preceding a paralysis of the seventh nerve has been mentioned by others.

The peculiar expressionless blank of a human face totally paralyzed on both sides can not be described. Neither can one describe the sensation it imparts to the observer, a sort of uncanny, morbid fascination. There is something about it almost wierd and spectral-like; especially in a case like ours where

the features were those of an intelligent, matured individual, clear cut and free from swelling or other distortion.

When told to shut his eyes the balls rolled up, leaving a width of half an inch of the white of both eyes between the opened lids, giving an inanimate, mask-like appearance that is very striking. In Oppenheim's text-book there is a good reproduction of a face of this kind. Mills, in his text-book, describes a case of facial diplegia and dwells on the fact that the eyes have a less important rôle in facial expression than is commonly supposed. Their movements and brilliancy can not dispel the vacuous look of a paralyzed face to the extent one would expect to find.

Our patient was unable to eat solids. The speech was peculiarly lingual. When conversing he almost constantly supported the lower lip with the tip of his finger. He overcame the imbecilic appearance of his mouth hanging open by keeping his jaws closed and with his finger frequently pushing the lower lip beneath the upper to which it would adhere for a time. There was not the great dribbling of saliva that is seen when the pharynx is also paretic.

A faradic current which produced lively contractions in the muscles of the neck made no impression on those of the face.

At the end of two weeks he was beginning to regain control of his face especially on the right side. I have not seen him since.

A Case of Muscular Atrophy: A Case of Lingual Hemiatrophy, with Presentation of Patients.

BY GIVEN CAMPBELL, JR., M.D.,

ST. LOUIS, MO.

THE modern tendency towards simplifying our classification of the muscular atrophies, renders a résumé of our knowledge of these conditions advisable before presenting this case.

Read before the Medical Society of City Hospital Alumni, September 19, 1901.

In 1850, Duchenne, and a little later, Aran, brought into prominence a disease producing wasting of the muscles unaccompanied by sensory changes, commencing in the small muscles of the hands, involving the shoulder girdle later and developing in adult life. Pathological research subsequently



Progressive Muscular Atrophy, showing characteristic axillary fold and projection of scapula into the supraclavicular space on the right side.

proved in these cases that the condition was accompanied by degenerative changes in the cell bodies in the anterior horn of the spinal cord and in the axones of the pyramidal tract cells. Later study developed the fact that certain cases of muscular atrophy commenced in infancy or youth; that in these cases the atrophy affected the roots of the extremities rather than

their distal ends. Reaction of degeneration was not found, although often present in the first-mentioned cases; true and pseudo-hypertrophy were often observed. In these cases the hereditary tendency (absent in the cases first described) was strongly present: autopsies showed no changes in the central or peripheral nervous system, the muscles alone appearing to be affected.



Progressive Muscular Dystrophy, showing especially well the tilting of the right scapula. The patient is pressing his hands forcibly together.

There were thus formed two classes of progressive muscular atrophy: The spinal form or progressive amyotrophy, and the essentially muscular form or progressive muscular dystrophy, or as it is commonly called, dystrophy.

It is to the latter class of cases that our patient belongs,

and on the subdivisions of which a few more words will be said. Until quite recently there has been a tendency to make definite classes of the dystrophies according as they affected different groups of muscles, as to whether pseudo-hypertrophy was a prominent symptom and as to the age at which the atrophy first appeared. To each of these types the name of its discoverer was given and a cumbersome nomenclature was built up; but as time has passed and cases have accumulated, the distinctness of these types has faded. It is seen that the dystrophies merge one into the other; that even the pseudo-hypertrophic form does not always keep to its type; that pseudo-hypertrophy frequently occurs in certain muscles in the juvenile type, and what is more important, that in families where dystrophy is present one brother will suffer from pseudo-hypertrophy, while another will develop the juvenile or, perhaps, the so-called "hereditary" type of muscular atrophy. We now, therefore, refine much less in our classification of the dystrophies, but still consider them as entirely separate, clinically at least, from the spinal muscular atrophies or amyotrophies. The essential difference between the two conditions lies probably in that in the amyotrophies the muscular wasting is secondary to an atrophy of the motor cells of the anterior horn of the spinal cord, this atrophy being usually accompanied by degeneration of the lateral columns of the cord. The muscles directly connected with the anterior horn cells that have been destroyed atrophy as do all muscles whose lower motor neurone has perished; while in the dystrophies there is reason to believe that the muscular wasting is due to some developmental deficiency. Recent investigation shows that new-born animals possess many more muscle fibers than adults, and it has been suggested that this natural disappearance of muscle fibers may, from some cause, exceed physiological limits and produce dystrophy. The appearance of dystrophy in several members of the same family, or in several members of succeeding generations; its propagation by the females; its appearance during active growth, and at developmental epochs, stamp it as a developmental disease.

The history of the patient before us is as follows:

Parents healthy; no brothers; mother's brother had a paralysis of the shoulders, similar to that from which the patient is suffering; infancy and childhood uneventful. He lived on a farm and did the active work of a farm boy up to six

months ago; for the past five years, however, he has complained of a weakness in his back and shoulders, which has progressively increased.

Aspect, as seen in photographs, presents the typical appearance of muscular dystrophy. The apparent increase in the length of neck is due to the falling of the shoulders; the clavicle sloping outward and downward where it should normally slope outward and upward; the marked muscular belly on the deltoid well below the point of the shoulder; the peculiar axillary fold, due to the absence of the pectoral muscles; the striking displacement of the scapulæ, owing to which the superior internal angle appears in the supraclavicular space in front (shown in front-view photograph by cross); the atrophy of the upper-arm and exemption of the forearm and hand; the pseudo-hypertrophy of the supra- and infraspinatus muscles; all illustrating strikingly the picture of muscular dystrophy which we had been accustomed to designate as of the juvenile or scapulo-humeral type, or type of Erb.

The displacement of the scapula, especially on the right, is more extreme than is usually seen in these conditions. The bone pushes up the line from head to point of shoulder and gives the appearance of an unusual development of the trapezius.

Another striking feature of the case and one very well shown in the photographs, is the remarkable good development of the muscles not involved in the disease, notably on the lower limbs. The thigh muscles are those of an athlete in strength as well as in appearance. A history of how this development was brought about is no less interesting than instructive; the patient states that as his back in the course of the disease, became gradually weak, he found that in doing his work it became easier in lifting things to squat down and raise himself by means of his thighs than to use his back. He thus saved his back at the expense of an added strength to his thigh, and right here is a valuable lesson in the management of these diseases. Keep such patients on their feet and keep them active. The progress of the disease is very slow and uniform, and there is ample time for other muscles to hypertrophy and compensate for those that are diseased. Avoid food that will make such patients overly fat, and if contractures occur resort early to tenotomy. Drugs are of little avail in treating dystrophy;

thyroid feeding may be tried ; persistent electrotherapy, massage, hydrotherapy, and, above all, a carefully prescribed and directed course of muscular exercise, such as can be given with a Whiteley exerciser offers the best hope.

Perseverance in these measures will keep such patients active and useful long after others in the treatment of whom these measures have been neglected, have become bedridden.



Lingual Hemiatrophy.

The writer would suggest the following conclusions: (1) Spinal muscular atrophy and muscular dystrophy are still to be regarded as separate diseases ; the one a disease of the spinal cord, probably in the broadest sense toxic in nature, and in which the muscular atrophy is a secondary process ; the other a disease primary in the muscles and due to a developmental defect in the genesis of muscular tissue. (2) That the attempt to divide the dystrophies into distinct classes is not justified by our present knowledge and (3) that in treating dystrophy more can be accomplished through measures that stimulate a compensatory hypertrophy of the muscles spared by the disease than by any other method, and that the success following such efforts amply justifies the undertaking.

The subject of this report of lingual hemiatrophy represents in a very typical manner a condition interesting because of its rarity.*

The accompanying illustration shows the deformity in a very satisfactory manner. The atrophy was discovered accidentally. The patient here present was first seen by me September 14, 1900; she came to the clinic for treatment of a facial spasm, and on causing her to show her tongue the condition we now see was discovered. She does not know how long her tongue has been in this condition; in fact, she did not know that her tongue was in any way different from other peoples' tongues; she was able to use it in eating in an entirely satisfactory manner, and the deformity did not interfere with speech. She shows, in addition to the lingual hemaitrophy, an atrophy of the sternomastoid of the same side and a motor paralysis of the same side of the larynx.

*Photographs were taken by Mr. G. T. Dougherty, of No. 1902 O'Fallon street.

The Blood in Syphilis and Other Infectious Diseases, and Changes Effected Through Medication, Diet, Etc.

By L. H. WARNER, A.M., M.D., Ph.D.,

NEW YORK CITY.

THE value of blood examinations as an aid to reach a quick and correct diagnosis has been repeatedly demonstrated, and has become an important factor to the diagnostician, providing the histological structure of the erythrocytes and the differential count of the leucocytes, the estimation of hemoglobin and count of red and white corpuscles are correctly reported. Inaccuracy or imperfect methods employed while obtaining the blood for examination will remove all possible chances for arriving at a correct diagnosis. I refer to a method widely employed and advocated in many medical works, that is, to puncture the lobe of the ear or the tip of the

*Read at the Medical Society of the District of Columbia, Washington, D. C.,
April 8, 1901.*

finger with a lancet or surgical needle. The exhibition of any of these surgical instruments will cause a certain amount of fright or shock to the patient, and we know fully well that a leucocytosis due to shock will follow, and, consequently, an erroneous report of blood examination will be rendered. I have repeatedly tested the accuracy of the aforesaid statement and now employ a special blood needle, somewhat similar to a scarificator with most gratifying results.

Whenever and wherever we follow the course of a disease with blood examinations we must consider probable changes due to hygienic, dietetic or therapeutic measures employed; we must obtain our blood for examination at the proper hour, that is to say, we must obtain the blood between meal hours and at a time when our patient is at rest. Immediately before, during, or after the meals the number of leucocytes increases and we would, therefore, be presented with an inaccurate blood picture. Blood, unlike other tissues, is restricted in its independence. It is subservient to other tissues. The reproduction of its cellular elements occurs in specific organs, the integrity of its intercellular or fluid part is dependent upon the general systemic metabolism, the state of the fixed tissues, proper maintenance of circulation, etc. Diseases of the blood are not primary disorders, but rather are results of underlying derangements of other structures. The study of the structure of blood, with special reference to the pathological changes in the blood as appertaining to disease, is being pursued by savants of both continents, and this day hematology is one of the important aids to the diagnostician.

Blood examinations have presented to us correct pictures of the blood in anemia and chlorosis, and aside from the Widal test the counting of corpuscles has aided us in arriving at an early diagnosis of typhoid fever. We are apt to say that anemia accompanies certain diseases without ascertaining this to be a fact; we fail to consider that if the anemia is due to a diseased condition or to the effects of medication, and going further, we often fail to differentiate between anemia and chlorosis. This appertains especially to all infectious diseases and particularly to syphilis.

Reiss (*Archives of Dermatology and Syphilis*, 1895, Vol. I) says: The general constitutional influence of the poison of syphilis is best indicated by the condition of the blood; and well might he have added, and the efficacy of our therapeuti-

cal agents employed in the treatment of syphilis can be best observed by continued blood examinations. Of diagnostic value in syphilis is the occurrence of leucocytosis, with increased percentage of young leucocytes, and of eosinophiles, as against phthisis, typhoid, and other malignant diseases. While we were satisfied in former years to learn from blood examinations of syphilitic patients the stage and severity of infection, we are now able to make deductions based upon occurring pathological changes. In the first stage of syphilis our patient appears weak, tired, pale, and the blood examination reveals low percentage of hemoglobin, and high percentage of young leucocytes, not a picture of anemia but rather of chlorosis, to which I will refer later.

The second stage reveals a leucocytosis, low percentage of hemoglobin and high percentage of young leucocytes; and the third stage reveals myelocytes, a marked, so-called anemia and frequently eosinophilia. Especially characteristic are the changes of the white blood cells; in the first stage they are either normal or slightly increased. The percentage of adult forms is low and that of the young forms high (lymphocytes). If mercury, or iodide of potassium is given at this stage, we note the increase of adult forms, and a decrease of the young forms. Given to a healthy person the opposite effects are noted. Whether the terms anemia applied to such conditions is correct or not, is a question open for debate. Ricord and Grassi term it syphilitic chlorosis and my own opinion sides with theirs. Let us compare the definition for anemia and chlorosis. Anemia clinically represents a variety of affections and according to the amount of deteriorations has to be classified as primary, idiopathic, or symptomatic anemia. In anemia the reduction of hemoglobin and red cells run approximately very close. Chlorosis is a primary or essential anemia, dependent upon retarded hematogenesis, characterized by peculiar pallor, reduction of hemoglobin and to a less extent, of the number of red corpuscles. This latter condition applies to the blood of all syphilitic patients; the chlorosis improves in most cases but this is dependent upon the medication employed. Continued increase of white corpuscles will lead to leucocytosis, lymphatic anemia, and if the spleen is affected, to leukemia. Regarding the blood in syphilis, Conried (International Dermatological Congress, 1892) says: During first to seventh week the red corpuscles remain normal, the

hemoglobin falls 10–20 per cent, and continues to sink until treatment begins and causes a slight decrease of the red corpuscles. Newman and Conreid (*Wiener Klinische Wochenschrift*, 1893, No. 19) find decrease of hemoglobin, but not of red corpuscles up to the secondary symptoms. Lezins ("Inang Dissert Dorpat" 1889) corroborates Newman and Conried. Reiss (*Archives of Dermatology and Syphilis*, 1895, Vol. I) finds that during the time between the chancre and secondary symptoms red cells are slightly increased, which is more marked after secondary symptoms appear. This continues for a time after treatment begins. Hemoglobin sinks from the time of primary lesion and is not affected by eruption. Even under treatment hemoglobin never gets up to normal, and prolonged mercury lowers it, although it has at first a beneficial effect on the hemoglobin. Justus ("Verhandlung des 5 Congress d. Dermatol. Gesellschaft" September, 1895) states that he gives an inunction of mercury in cases in which secondary symptoms have not yet appeared. He thereupon notes a marked fall in hemoglobin owing to the action of mercury on the weakened red corpuscles. This sudden fall is followed by a gradual rise, until within a few days the coloring matter is at a point slightly higher than before the mercury was given. This remains negative in all other diseases. Of late I have examined the blood of several hundred syphilitic patients and found Justus' statements corroborated. I noted the following facts while studying the fresh and stained blood of several hundred syphilitic cases in the N. Y. Skin and Cancer Hospital, Bellevue out-door clinic, and private cases. The Justus hemoglobin test brings positive results, the red cells appear vary-formed, rouleaux are small and scattered, and three or more crenated red corpuscles appear in each field detached from any other blood cells, and if observed on the hot stage have a vibrating motion on them. Before treatment the lymphocytes are the most numerous of the white cells, while after beginning of treatment the polynuclear neutrophils are predominant, indicating a digestive leucocytosis. Occasionally we come across an eosinophilia. In severe cases we find megaloblasts, microcytes, poikilocytes and nucleated red corpuscles. This latter condition is found in severe anemia.

Before citing my findings regarding the pathological changes occurring in the blood of syphilitics as induced by medication, I would like to point to the still unexplained the-

ory, is syphilis a disease caused by pathogenic bacteria, or influenced by a virus. Lustgarten claims he has found a bacterium resembling the smegma or tubercle bacillus in the blood of syphilitics. He advocates the use of a staining method devised by him, and without discrediting his excellent work, I must say that I have found the identical bacillus of which he speaks in all cases where a mixed infection of tuberculosis and syphilis prevailed, while I never succeeded in finding the bacillus Lustgarten in a clear case of syphilis.

Pathogenic bacteria are always within, or surrounding pus, as the gonococcus within the pus cell, the tubercle bacillus within or between the pus cells, etc., and although I have repeatedly tried the Lustgarten staining method on pus taken from syphilitics, I have always had negative results. On the other hand I have examined the fresh and stained blood specimens of blood in syphilis, carcinoma and blood taken from a patient before and after vaccination, and in each instance I found polynuclear neutrophiles with basophilic granulation. This basophilic granulation was especially marked directly within the nucleus. I have tried the same staining method with blood from cases of tuberculosis, typhoid, pneumonia, etc., always with negative results. The danger of infection from syphilis is as great as from diseases due to pathogenic bacteria; medical records cite case upon case where infection was brought about through coming in close contact with carcinoma or syphilis sufferers, also case upon case of infection by coming in contact with patients suffering from diseases due to invasion of the organism by pathogenic bacteria, and we also have the record of a girl infected while sleeping with her sister who had been recently vaccinated, and who acquired a vaccine pustule on the eyelid. Blood examination in this case presented a picture similar to that of syphilitic blood, and caused me to institute a series of experimentations and observations. To a normal specimen of blood the smallest particle of pus taken from a syphilitic ulcer was added and the specimen was studied while on the hot stage; within five minutes a few detached crenated red corpuscles appeared, and subsequent staining of this specimen presented neutrophiles with faint basophilic granulations. The normal unaltered specimen showed plain polynuclear and mononuclear leucocytes only.

The same results were observed while experimenting on the same lines with pus from a vaccine pustule or exudate

from a carcinomatous surface. Various pathogenic bacteria from clear cultures added to normal blood did not alter the histological structure of the cells. This leads me to the belief that carcinoma and syphilis are due to a virus intoxication. After long and tedious research work in the New York State Pathological Laboratory at Buffalo, Gaylord claims to have found a protozoon to be the factor in carcinoma, and if such findings find further corroboration, they will aid in explaining the histological changes of the blood in carcinoma, as the finding of the malarial parasite in malarial blood explains the altered conditions of the blood in this disease. Although we have not found an antitoxin or therapeutic agent with which to combat carcinoma, we have at our command therapeutic agents which enable us to conquer syphilis. Treatment alone removes, not only the manifestations of syphilis, but also the disease, and with it, its contagiousness by about the end of the sixth year. Mueller and Kaunberg (*Archives Dermatology and Syphilis* Vol. XXXV No. 11) have resorted to serum-therapy, but have seen no influence on the course of the disease. The treatment of syphilis by inunctions has its drawbacks, such as the soiling of the clothing and the impossibility to control dosage. The hair and skin about the part of the body where mercury is applied locally, will show minute globules of mercury when examined under the microscope, showing how little of the medication is available for therapeutic effects. Mercurial plaster, although especially useful in syphilis of children, causes a deal of irritation, and it also has the same disadvantages regarding graded doses as in the case of inunctions. The administration of mercury by the hypodermic method, in which are included the intracellular, intramuscular and intravenous injections, is the only method above all criticism. Lane (*British Medical Journal*, December 12, 1896) says: The advantages of injections are, the functions of the digestive tract are not interfered with, the doses of the mercury salt are small, and certain of absorption, and can easily be regulated by the varying susceptibilities of different individuals. Julien (*Arch. Gen. de Med.*, No. 5, 1896) says: Subcutaneous injections of mercury possess two advantages, as the liver and alimentary mucous membranes are spared. He prefers to inject into the supra- and infrascapular fossæ of the scapula region. Strict asepsis must be enforced. As to the advantages, he refers to the prompt-

titude of effects, the intensity of action, and the persistent and positive character of its cures.

Dabney (*New Orleans Med. and Surg., Jour.* April, 1897) says: The hypodermic method of treating syphilis possesses many advantages over other methods, when used by physicians bold enough to disregard the dosage recommended by most writers on therapeutics. He never observed pytalism or stomatitis in cases treated by this method, and claims as advantages; 1st, accuracy of dose, 2nd, rapidity of action, 3rd, small amount of mercury used and short time needed to effect a cure, 4th, constant effect of drug day and night, 5th, absence of gastrointestinal disturbances and 6th, quick diagnosis in questionable cases.

Hebra, Scarenzo and Hill were the first to use subcutaneous injections, but the incentive was given by Lewin. Mercury preparations suitable for hypodermic use are divided into soluble and insoluble salts. Although it seems practicable to employ the insoluble salts hypodermically by suspending them in glycerine, oil mucilage, etc., it was soon found out that the suspension of mercury in oil causes the metal to sink to the bottom, and even if thoroughly shaken, exact dosage is out of the question, and furthermore, there is no way to control the absorption of insoluble medicaments. Calomel and bichloride of mercury in aqueous solution are now much used but are accompanied by grave objections. They produce irritation, are painful to the patient, produce abscesses, and frequently bring on rigors. However they have great advantage over the administration of mercuric salts by the stomach. Panas, Fournier, Lanceroux, and Brissand recommend a specific bin-iodized oil, ten parts of bin-iodide of mercury in a nascent soluble condition, to 1000 parts of neutral aseptic oil. The injections should be made slowly in the mass of muscular tissue, the needle penetrating completely. The zone most adapted to injections is the sacro-lumbar mass. The choice of a spot having been made, the epidermis should be energetically rubbed with some cotton-wool imbibed with alcohol, or even a few drops of bin-iodized mercurial oil in order to insure local aseptic conditions. This product can also be given by the mouth in capsules, each containing two milligrams of active principle, or 1-30 grain of red iodide of mercury. The capsules are tolerated for months, producing no diarrhea, dyspeptic conditions, pytalism etc. This oil is not affected by the

gastric juice, but is slowly emulsified in the intestines, (as are all oils) the iodide becoming an alkaline iodide, a very fine mercuric oxide remaining, which still more slowly (and without any irritating effects) becomes very finely divided metallic mercury, which is assimilated along with the nutrition, and carried in the currents of circulating fluids, penetrating every part of the body. When hypodermically injected, there is gradual emulsification of the oil by the alkalinity of the blood in the tissues, precipitation very slowly of mercuric oxide and gradual reduction to metallic mercury, with final but more prompt dissemination throughout the organism than when given in capsules. While this method entails more trouble, there is an entire absence of all doubt as to the assimilation of this form of mercury, and there is a positive certainty of the digestive function not being interfered with; besides when mercurials are given by the mouth, the amount retained in the body must always be variable, whereas, by hypodermic injections, only small portions can escape by the ordinary excreting apparatus.

Having thus covered the general line of treatment in the primary stages of syphilis and its effect upon the blood, I may here mention that the bin-iodide is a compound derivative from the halogens. Whenever the regular iodide treatment is indicated not alone in syphilis but all other diseases, we are apt to neglect to observe the deleterious effect of the electro-magnetic saline compound of the iodine halogen upon the blood. It has been demonstrated that the administration of the iodide of ammonia, sodium, potassium and mercury is followed by digestive disturbances, that but little of the iodine is resorbed, which fact is demonstrated by chemical analysis. All alkaline halogen preparations act as irritants in the stomach, hence cause a digestive leucocytosis. They form combinations with organic or starchy compounds and finally pass into the blood, acting as alterants. We must not lose sight of the fact that the physio-chemical change these products have undergone in the stomach and intestines cause a loss of the halogen to the organism which again is proven by the rapid appearance of iodine reaction in the urine. Iodine acts as an alterant, it counteracts the effects of the syphilitic virus and promotes the absorption and removal of its products from the body. It also acts upon the tissues affected by tuberculosis, removing effete material and rendering them less favorable for the development of bacilli.

My attention of late has been called to the halogenal acids through the works of Blum (*Munchener med. Wochens.*, 1896, No. 45) and Zuelzer (*Archiv f. Dermatology and Syphilis*). They experimented for a lengthy period with certain halogen albumen derivatives and one of these has been thoroughly tested by me in physiological and biological research work and subsequently in various clinics. I find that they act as halogen carriers in the organism and do not act as irritants in the stomach, they do not cause any digestive disturbances, subsequently no digestive leucocytosis; they cause a gradual and constant appearance of iodine reaction in the urine, demonstrating the fact that the full amount of iodine or chlorine halogen is used up in the body. As Blum so ably states the organism is compelled to use up the full amount of halogen in iodalbacid, for the kidneys are unable to excrete these halogen albumen bodies unless decomposed, and when thoroughly decomposed, which means liberation of the halogen, which is thus able to exert its full therapeutic effect; then and not until then the urine will exhibit the decomposition products. The therapeutic value of iodalbacid has been thoroughly demonstrated by clinical observations, and should, in my opinion, be considered as the rational form of iodine therapy.

[20 WEST 34TH STREET.]

Report of Work in Ureteral Catheterization in the City Hospital the Past Year.

By. H. L. NIETERT, M.D.,

ST. LOUIS, MO.,

SUPERINTENDENT ST. LOUIS CITY HOSPITAL.

DURING the past year about twenty-five cystoscopic examinations and catheterizations of the ureters in females were made at the City Hospital. The examinations were in each case made with a Kelly-Pawlic cystoscope under general anesthetic. The dorsal position with elevation of hips about ten inches above the rest of the body was employed. This elevation in all but one case answered the purpose

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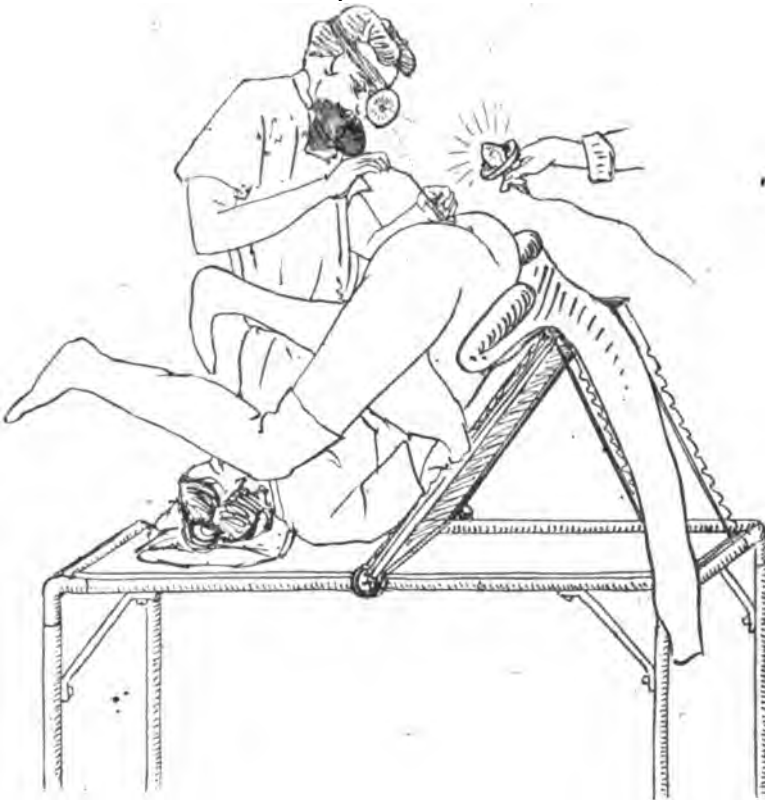
of producing distention of bladder sufficiently to inspect the mucous membrane and catheterize the ureters. It was observed that drawing down the perineum, by means of the finger introduced into the vagina, and allowing the posterior walls of the bladder to drop down, greatly facilitated its distention.

After introduction of the cystoscope into the bladder to almost its full length, it has been the practice to introduce the index finger into the vagina, gently pressing the bladder-wall against the end of the instrument. Then with the mucous membrane of the bladder under constant observation, the instrument was slowly withdrawn until the interureteric folds of mucous membrane was reached. The moment the end of the instrument fell upon this fold it would spring prominently before the opening. The fold once demonstrated it is usually an easy matter to find the ureters, which are located on the top of the folds and about three-fourth inch to either side of median line.

The operations were usually performed with little difficulty, until recently when an attempt was made to catheterize a very large and fleshy woman. Here the slight elevation proved insufficient to properly dilate the bladder. The tense and heavy abdominal wall pressed too firmly upon the organ to permit of any inflation. After repeated attempts to find the ureters in this contracted state of the bladder, the search was abandoned. The patient was too large and heavy to place in the knee-chest position practiced by Kelly. The idea then occurred that I might be successful if the pelvis were elevated to almost a vertical position. This was accomplished by elevating the end of the table to the extreme Trendelenburg and strongly flexing the thighs upon the abdomen, thus producing a combined Trendelenburg and lithotomy position as shown in accompanying illustration. It was necessary, of course, to change my position from the end of the table to the side of the patient, with the instrument directed almost horizontally backward. In this position I was able to thoroughly inspect the bladder. The distention was perfect as all pressure had been removed. The intestines and uterus had fallen away from that organ, allowing a perfect inflation. I was able to catheterize the ureters without any further difficulty.

I believe the distention of the bladder by this method is more perfect than that of the knee-chest position and is less uncomfortable to the patient.

The male ureters were catheterized six times with the Lewis cystoscope and all under his directions. The first catheterization was performed about one year ago with an old model of the present instrument, which did not provide for the inflation of the bladder. The patient was placed in the knee-chest position and the examination was made under a general anesthetic.



The combined Lithotomy and Trendelenburg Position for Catheterizing the Ureters.

The last five catheterizations were performed about two months ago with the modified instrument presented here this evening.

The time required in catheterizing the male ureters is about the same as that required in the female with the Kelly instrument, namely about one-half to one minute.

Thus far we have not had an opportunity to try the cystoscope for females devised by Dr. Lewis, but after a careful

examination of the same I can see quite an advantage in his instrument over the Kelly-Pawlic cystoscope. First, with the Lewis instrument the bladder-wall can be perfectly fixed by the inflation of the organs and thus a perfect view of the mucous membrane obtained. Second, by the distention of the bladder with air, the wall is carried farther from the end of the instrument, giving the operator a view of a large area at one time and facilitating the finding of the ureters. Third, the illumination from the small lamp in the end of the instrument is more satisfactory than the indirect light from a mirror. Fourth, the instrument has a carrier, so that a flexible catheter can easily be used if it is desired to wash out the pelvis of the kidney.

In conclusion I wish to state in reference to Dr. Lewis' cystoscope for the male, that it possesses marked advantages over most of the other designs, inasmuch as it enables the operator: first, to fix the bladder wall with air instead of water, secondly, to catheterize the ureters by direct light.

Since reading this paper before the Hospital Alumni Association an article appeared in the *Journal of the American Medical Association* of October 26, 1901, describing a new gynecological position, used by F. Jayle. The article was copied from the *British Medical Journal*. Jayle uses the position I described in my report for a great number of his surgical operations on the bladder and vagina and uses it especially for operations for vaginal fistula.

Case of Recurrent Laryngeal Paralysis Due to Aortic Aneurysm.

By WILLIAM E SAUER, M.D.,

ST. LOUIS, MO.

THE patient, Mr. J. C., aged 42 years; first consulted me on June 3, 1901, being referred by Dr A. C. Bernays. He states that in the early part of November, 1900, he suddenly became speechless—that is, could not speak above a whisper, but after a few minutes his voice returned

Read before the Medical Society of City Hospital Alumni, September 5, 1901.

and he could speak as well as ever. About a week later he again lost his voice, but this time he was speechless for about ten days, after which his voice returned but he was very hoarse and remained so up to the present time.

Three years ago while writing on a blackboard in a pool-room, he was suddenly seized with a sharp pain in the chest, radiating to back and down left arm with a tingling sensation in fingers; since then he has been troubled with a hacking. He has been treated for rheumatism, tuberculosis, grip, and many other afflictions, until March of this year, when the case was diagnosed as syphilis, and he sent to Hot Springs where he remained seven weeks, receiving the usual inunctions and hot baths; having taken some forty five in all. The pain in his chest was greatly relieved, but he began to have attacks of shortness of breath, with wheezing in the chest, and during the past few weeks he could sleep but little and lost greatly in weight.

Family history is good. Previous history: There has existed since childhood a mild ear trouble; he has had some five or six attacks of gonorrhea, and two suppurating bubos fifteen years ago. I could not elicit any syphilitic history. Up to fifteen years ago he had been employed as an expressman, doing heavy work, since then he has been a clerk in a cigar store and pool-room.

On examining the patient I found his voice hoarse and harsh in character; his respirations were somewhat rapid. In the larynx I found a typical recurrent laryngeal paralysis, that is, during respiration the left cord was immovable in a position mid way between adduction and abduction; during efforts of phonation the right cord caused the median line to meet its fellow on the opposite side. Suspecting an aortic aneurism as the cause of the paralysis I next examined his chest and found distinctly visible pulsation over the upper portion of sternum as well as marked pulsation in the carotids; on palpating this region a distinct systolic impulse with a marked diastolic shock was felt.

Percussion revealed an area of dulness extending just beyond the outer edge of the sternum on the right, and about an inch and a half beyond the left margin of the sternum; above on a line with the upper margin of the second rib and below blending into those of the heart dulness.

On auscultation, a faint systolic murmur with a loud ringing

second-sound could be heard, and all over the chest numerous sonorous rales could be heard. The heart did not seem to be displaced or enlarged, and save for the markedly accentuated second-sound nothing abnormal could be detected. I could not make out any difference between the two radial pulses. Tracheal tugging was well marked.

He was put on increasing doses of potassium iodide, and after a week had elapsed he began to breathe very much easier and could sleep very much better.

On June 15th, he went to Detroit where he remained until July 16th, and on his return felt very much better in every way, he could sleep without interruption and had gained some ten pounds in weight. I again examined him, but could not make out any changes in his larynx or chest. He had been taking up to 30 drops of the saturated potassium iodide solution; this was gradually reduced to 15 drops three times daily, which he has been taking continuously since July 22d; Since this time I have examined him repeatedly, and during the past few weeks, thought I could notice a decrease in the force of the pulsations, and that the area of dulness does not appear to be quite as large as it was. In the larynx I found no change.

Case of Recurrent Laryngeal Paralysis Due to Aortic Aneurysm.

By L. H. HEMPLEMANN, M.D.,

ST. LOUIS, MO.,

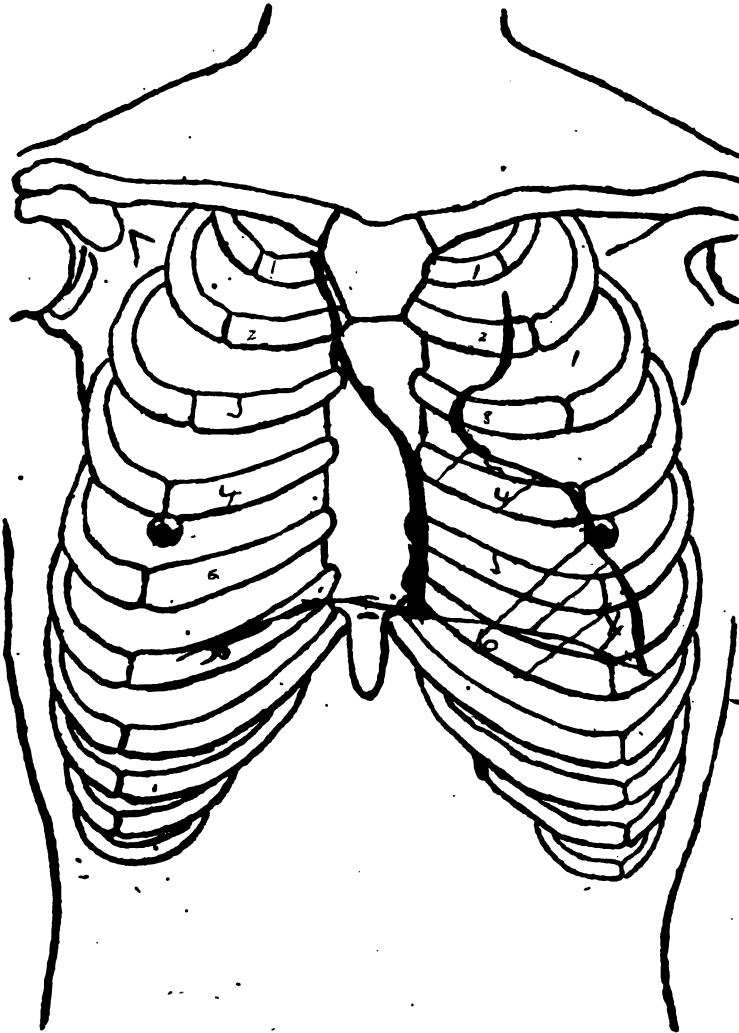
PATIENT, James J., aged 45 years. Family history: Cause of father's death unknown; mother, two sisters and one brother alive and healthy.

Previous history: Two years ago he injured his ankle in jumping off a moving train, otherwise always healthy. Has had gonorrhea several times; had sore on penis about ten years ago and again six years ago; no history of secondary symptoms or of any specific treatment.

Is a moulder by trade and has been in the habit of carrying ladles of molted iron. Was a prize fighter from 1878 to

Read before the Medical Society of City Hospital Alumni, September 5, 1901.

1884; fought 13 battles with bare fists; has always used alcoholic liquors to excess; drank beer mainly, but also a great deal of whiskey; drank continually and went on speers.



Present trouble began, as patient says, about a year ago, at which time he noticed pains in precordium and in left arm, they came on periodically, sometimes every day; he has suffered from cough and dyspnea for past four months; he can not lie on his right side because of the dyspnea; he worked up to July of this year.

Urine 1020, no albumen or sugar.

Physical examination: The patient is a very muscular, well-nourished man. The pupils are equal, the pulsation is distinct over the upper part of the sternum, the whole sternum seeming to rise at each systole; there are no dilated veins; no thrill can be felt over the chest or in the suprasternal notch, the apex beat is in the fifth interspace in the mammary line; it is not very heaving; the radials and carotids are synchronous.

Dulness as per diagram. Normal sounds are heard at the apex over the second right intercostal space, a fairly clear first-sound is heard and a faint diastolic murmur. Over the third left intercostal space and more plainly in the second is heard a faint first-sound and a plain blowing diastolic murmur. His voice is hoarse and he has the brassy cough so characteristic of recurrent paralysis. I have been unable to see the vocal chords as the patient is an alcoholic and has a very irritable pharyngeal reflex.

There is no dislocation and apparently but little hypertrophy of the heart. There is a horizontal pulsation of the trachea when the head is extended, which I take to be transmitted from the carotids rather than a "tracheal tug." He is quite dyspneic; there has never been any difficulty in deglutition nor any asthmatic or neuralgic attacks.

Corneal Ectasia with Preservation of Central Transparency Subsequent to Recurrent Marginal Keratitis.

By JOHN GREEN, JR., M.D.,

ST. LOUIS, MO.

KERATECTASIA as a sequel to inflammatory changes in the cornea is in general characterized by (a) serious impairment, or even total loss, of vision; (b) the ectatic portion is formed of cicatricial tissue and is, hence, opaque. The following case differs from the classical type in that (a) vision (with appropriate glasses), is still fairly acute; (b) the ectasia is formed by *normal* tissue and is transparent.

Read before the Medical Society of City Hospital Alumni, September 19, 1901.

J. M., male, German, aged 61 years, came under observation July 13, 1901. Family history good. He served as a cavalryman in the Confederate army 1861-65, and underwent considerable hardship, but was not seriously ill during this period. He believes he contracted syphilis in 1864, and was under irregular treatment two months.

Ocular history.—In 1894, following an attack of grip, the patient began to have attacks of redness of the eyes, with pain, lachrymation and photophobia; each attack lasting from two to seven days. He would remain free from symptoms for thirty to sixty days, when a precisely similar attack would occur; the recurrences continued four years.

Three years ago the patient noticed that a point of light "looked like a star," and that occasionally distant objects appeared double. His friends noticed a "staring" appearance of the left eye. On experimenting, vision was found moderately impaired in right eye, markedly impaired in left eye. Vision is thought to have grown progressively worse up to a year ago, since which time no change has taken place either in vision or appearance.

Status præsens.—Right eye: Inspection reveals an annular sulcus involving the upper half of the corneal periphery; the sulcus is semicircular in profile and runs parallel to and one and one half mm. from the sclero-corneal junction. Minute blood vessels run beneath the trough of the sulcus and terminate in delicate points of opacity. A pterygial growth pervades the cornea at the inner lower quadrant. Viewed laterally, the cornea is obviously ectatic and has the appearance of a sharply beveled watch glass. The anterior chamber is a little deep; the pupil is circular, reacts actively to light and accommodation.

Left eye: Centrally the transparent cornea is pushed forward so that the apex of the ectasia lies four mm. above the transverse sclero-corneal plane. Above it is bordered by a broad and shallow sulcus presenting the same general characteristics as the excavation of the fellow eye. A pterygial growth invades the cornea at the lower inner quadrant. The anterior chamber is very deep, the pupil is circular and reacts to light and accommodation.

Ophthalmoscopic examination shows in both eyes clear media and normal eye-grounds.

The ophthalmometer (Javal-Schiötz) shows greatly in-

creased curvative and high grade of astigmatism in both eyes. An accurate measurement is impossible owing to the interference with the reflection of the mires by the pterygia.

Visual tests:

Right eye, V. $\frac{15}{150}$, without correction.

Left eye, V. $\frac{3}{150}$, without correction.

The best measurement of the refraction was found to be

Right eye M. 3, Am. 10, M $^{\circ}$ horizontal V. $\frac{15}{19}+$.

Left eye, M. 10, Am. 10, M $^{\circ}$ +45 $^{\circ}$, V. $\frac{15}{38}+$.

The initial process was probably an attack of marginal keratitis. In view of the formation of pseudo-ptyerygia and the tendency of the disease to pass through periods of "remission alternating with relapses" the diagnosis of keratitis marginalis superficialis (Fuchs) may fairly be made. Each succeeding exacerbation produced a greater and greater thinning of the corneal periphery until the attenuated tissues could no longer withstand the intraocular pressure. What, then, took place? The intraocular pressure, acting as a *vis a tergo* against Descemet's membrane, gradually stretched the weakened periphery thus carrying forward the apex of the cornea. The increased curvature is to be accounted for partly by the radial tension of the scar tissue, partly by the annular constriction at the periphery.

The Importation of Foreign Foods.—American cooking is becoming more and more cosmopolitan. According the *Literary Digest*, we welcome foreign national foods with the immigration of foreigners. The German, French, and Italian "delicatessen" shops has done much to popularize foreign foods in this country.

There is a long line of German preserves which are specially flavored; tips of asparagus, carrots, and other canned vegetables, which will be found on the market; then there is a long list of German meats and sausages, imported from different localities in Germany.

Japanese and Chinese dishes have been recently introduced. From Japan a great variety of devil fish food, put up in many forms is imported; mushrooms, shellfish, dried and preserved, are added to the list.

We fear that the balance of trade in our favor will be reduced in the next few years by the importation of ticklers to the palate; at any rate, with the plentiful supply of food in America it is certainly extravagant to obtain specially flavored foods at such distances.

LEADING ARTICLES.

THE DIFFICULTIES IN THE TREATMENT OF INFANTILE SCORBUTIS.

By E. W. SAUNDERS, M.D., St. Louis, Mo.

A perusal of the text books on the treatment of infantile scorbutic rickets (Barlow's disease) gives the impression that the management of these cases is exceedingly simple and eminently satisfactory.

In actual practice, however, the disease is so commonly complicated with other affections that the usual therapeutic measures can not be employed without considerable modification.

It will be recalled that the etiology of this disease is intimately connected with improper feeding. The feeding of milk which has been sterilized, condensed milk, the various dried patent foods, or a mixture of one of these foods and condensed milk, is in all cases dangerous; since citric acid is a normal constituent of mothers' and bovine milk, it has been suggested that the citrates are the antiscorbutic elements of normal foods, and heating the milk precipitates the citrate of lime, hence heat removes this essential principle. At any rate the administration of fresh foods and fruits containing citric acid is the treatment which promptly alleviates the condition.

But our efforts may be frustrated by existing complications, the most common of which will be considered:

1. The Infant has Complete Anorexia and Refuses all Food.

Here forcible feeding must be resorted to; the prescribed food must be given in small quantities with a spoon or, better still, with a dropper; sometimes the food must be introduced by the stomach tube.

2. The Infant Vomits Incessantly.

These are very troublesome cases. All attempts to introduce orange or lemon juice are rendered futile by being promptly rejected by the stomach; the fruit juice must then be given by the rectum.

Three or four ounces of starch solution or some cereal decoction, to which is added several tablespoonfuls of orange juice, is given high up in the sigmoid twice a day; meanwhile the irritability of the stomach must be quieted by appropriate means; egg albumen water is one of the best foods in these cases; whey will frequently be rejected. When the condition of the stomach has improved, meat-juice, whey, and cream mixtures, or, better still, human milk should be given,

3. The Infant Suffers from Enterocolitis.

The combination of scurvy and enterocolitis is not so very infrequent, and the utmost care must be used to save the patient.

The intestines must be cleansed by means of rectal irrigation; if the stools are serous, they must be controlled by the use of atropine and morphine. Some cereal decoction should be used as the base of our foods; to this is added some albuminous food; a little white of egg, whey, human milk, meat-juice, are the foods usually chosen; but to all must be added fruit-juice. Water must be administered, and to all water a little lemon-juice should be added. As a change, peach juice acts very nicely, and usually agrees with very delicate infants; grape juice is an excellent substitute when the lemon-juice is refused.

In regard to the feeding of scurvy, in general, a mixture of whey that has not been heated, and cream, is by far the best food when mother's milk can not be obtained. The whey should be made with essence of pepsin or rennet, and must not be heated as is usually done to destroy the rennet; it is true that the addition of casein will cause some precipitation, but these fine curds will pass through the nipple, the opening of which has been slightly enlarged. These fine casein particles are very readily digested; in many cases milk in every form does not agree, a general dietary must then be adapted to the digestion of the infant—vegetable soups, broths, gruels, with a plentiful supply of fruit-juices.

THE ANATOMICAL MUSEUM OF THE MEDICAL COLLEGE.

By R. J. TERRY, M.D., St. Louis, Mo.

While nearly every medical school can boast of a museum of some sort, there are not many that possess one which is generally useful. Every anatomical collection is of some value, however commonplace its specimens may appear to be; even a very ordinary collection may become of great value when its dusty and poorly placed jars and preparations are arranged to tell the story of structure in a connected way, and when such an orderly museum can be open at all times to the student, then a useful and telling adjunct has been made in the college equipment. The systematized museum open to students is not a common thing among medical schools. By systematized, reference is not made to those collections where, for convenience, related structures are grouped together—but to an arrangement of cases and specimens such that a person wholly unfamiliar with a certain subject could, by starting with the first case in a series, studying its contents and in succession the objects displayed in other dependent cases, become well grounded in the department represented. Such a system was evolved, or at any rate perfected, by Ray Lankester, at Oxford; it is the one in use in the main hall of the British Museum of Natural History at South Kensington. There one may see some generalized form occupying a case much too large for it alone, but not too large to contain a most elaborate “label,” a sheet, in fact, with drawings of the specimens, and accompanied by a brief description of the salient features.

Applied to the anatomical museum of the medical school the system would require first of all, a fundamental collection which should contain such preparations (whether of the human body or of the lower animals) as would best illustrate the general facts of the vertebrate structure.

A primary group, consisting of models of a simple egg in a few developmental stages, dissections of the dog-fish displaying its generalized system, would demonstrate admirably the body plan.

From a review of these forms the student would pass to a second series of cases which might deal with the general morphology of the locomotory apparatus, the digestive tract, central nervous system, etc.

Thus, the collection illustrating the anatomy of the locomotory apparatus would not be made up of all the bones, muscles and joints in the human body, but would be a small number of preparations exhibiting the internal structure of bone, its development, mode of growing, and the way it is nourished; cartilages, the kinds of joints, the nature of ligaments, the structure of muscles, and the manner in which they are fixed to harden the parts. Finally, the articulated skeleton of some animal would show the natural position and relation of the bones.

The other cases in this series would deal with the subject in the same way. The specimens used to carry out this plan are not difficult to obtain; the dissecting room, slaughter house, and market, make a field ample for collection of nearly everything needed.

Such an arrangement as the one outlined would give the student, in a striking way, a basis for advanced or special anatomical work, such as the study of the body of man; it would represent forcibly the scheme of the structure of higher animals.

The introduction of such a collection in a medical school might be criticised on the ground that "comparative" anatomy is not wanted and should be excluded from the course leading solely to the degree of Doctor of Medicine. In answer to such criticism it is only necessary to call attention to the place which general biology is assuming in medicine, not only as a preparation for beginning study, but as a most important part of the course; and, again, the obstacle in the way of medical progress which has resulted from the habit of thinking of "man and animals" can not be denied. The fundamental museum alone could not, however, meet the wants of a school of medicine, but to it can be built almost any kind of a special anatomical collection, and such are easily added in natural order.

In a third series of groups the parts of the human body might be systematically displayed. To continue in the line already used, as an example, namely, the locomotory apparatus, one case would be devoted to the upper limb, containing specimens of the young bones, sections to show the internal constitution of bones of this part of the body, the anatomy of the several joints and preparations of the upper limb muscles.

A final series of cases would show the varieties met with in the human body. So it will be seen that while the foundation of the collection is complete and would remain unchanged until some different

view of the body plan is adopted, the dependent series of groups are less so, and this incompleteness is most marked in the last series, which, indeed, can never be finished.

The growth and elaboration of the collection will go on in an orderly and logical way.

THE IMPORTANCE OF BLOOD EXAMINATIONS.

By W. L. JOHNSON, M.D., St. Louis, Mo.

While this subject is receiving a liberal share of attention, still there are physicians who for want of time, or for want of faith, perchance from the lack of knowledge, do not resort to blood examinations as an aid to diagnosis.

We were much impressed with the immediate assistance this measure afforded in a case we heard recited recently, in which there was a sudden onset of temperature (105.2°) with backache, persistent vomiting on the first day, and an evanescent rash. The patient was from Arkansas, where small pox was at that time prevalent, and where malaria is ever present. A bedside blood examination revealed the plasmodium, doubt was set at rest, and treatment at once availing.

Especially valuable is the result where we have the estivo-autumnal type of malaria which, no doubt, has many times passed for typhoid, and died as such.

Recently there was an infant, not 2 years old, who had, apparently, only a gastro enteric infection; inasmuch as treatment was ineffective—though there was little to suggest malaria—the blood was examined, plasmodia found, quinine injected hypodermically, with prompt recovery. Have not many infants perished for want of just this information?

We were interested and enlightened on hearing an essay a few days ago on some seventeen cases of dermatoses, such as erythema multiformis, herpes zoster, pompholyx in which the plasmodia were discovered in the blood, and curative results followed the giving of quinine; purpura has been found, at times, associated with malarial infection, as has spontaneous gangrene.

While trichiniasis is rare in this country, still it occurs, and a marked relative and actual increase in the eosinophiles would be of in-

estimable help, suggesting the probability of this disease (in the presence of other suggestive symptoms) and lead to, at least, examination of a muscular section.

Let us review how an examination of the blood might be of importance as a guide to or from a given disease.

A leucocytosis would exclude typhoid fever, tuberculosis, influenza, and measles.

A leucocytosis might point to scarlet fever. Thus, given a fever, an angina, an atypical rash—for we have scarlet rashes in influenza—a leucocytosis would point to scarlet fever and away from influenza.

Well known is the aid it affords in differentiating typhoid from appendicitis and other abdominal *inflammatory* conditions.

The question as to pneumonia or tuberculosis—and such cases arise in the young, from whom it is easier to obtain a blood specimen than the sputum—may be practically settled by a study of the blood, an increase in the leucocytes occurring in pneumonia and not in tuberculosis.

So also may purulent meningitis with its leucocytosis be differentiated from tuberculous meningitis.

We have noted that in typhoid there is no increase, rather a decrease, in the number of leucocytes. Let, however, a complication of an inflammatory character occur as a pericarditis or pleuritis and note the leucocytosis, or *noting a leucocytosis* upon counting, look out for the complication.

Not only is this means helpful in diagnosis, but is not without value in prognosis, for in the course of a grave disease a marked diminution of white cells warrants the gravest apprehensions and a correspondingly grave prognosis.

In the anemias, at times, we would be utterly at sea, were it not for the blood-count and picture. For instance, pernicious anemia with 1,500,000 red cells in each cubic mm. with other well-known changes in the shape and staining properties of the red cells and diminution in leucocytes, quite readily differentiates it from some of the other anemias.

Certainly few practitioners have the time, appliances, and skill to carry a blood examination to a successful and reliable issue, but there are exceedingly few, especially in the larger cities, who can not command the services of some friend or confrere who is skillful.

We do not advocate taking a specimen of blood in every case,

nor would we depend upon the findings exclusively, but as a diagnostic aid it ranks second to none and is destined to become more and more useful,

If this means is helpful to leaders of medicine—practical men—surely it may occasionally be of service to us.

CONSCIOUS TO THE END.

Bichat divided the mode of death into three classes: (1) Death beginning in the head, (2) beginning in the heart, and (3) beginning in the lungs. But there are really only two modes of death—failure of respiration and failure of the heart; for practical purposes this classification will be found sufficient. Coma as a mode of death must really terminate in one or the other failures.

From a prognostic point of view it is often exceedingly important to foretell the probable state of consciousness preceding the last hours of life. Much has been written on coma and the great complexity of its etiological factors; among these may be mentioned chronic nephritis, diabetes, cerebral diseases, cancer, severe septic infections, intoxications, acute yellow atrophy of the liver, etc.

On the other hand, in certain diseases the patient remains conscious to the end. Just a few diseases are characterized by coma, others are marked by a clear state of the intellect to the last moment preceding the cessation of cardiac contractions.

In this category may be mentioned, first, the acute diseases of the abdominal organs; in peritonitis, appendicitis, ileus, hernia, and abdominal operations. It is common in these affections for the patient to be almost pulseless and yet retain a clear intellect, talking to the attendants and giving directions as to the burial and matters pertaining to his social life; a sense of well being frequently precedes this mode of death. The patient may sing and relate how easy it is to die.

In diseases of the heart consciousness often remains clear to the last; the face may be dusky or cyanotic in appearance, the hands and feet cold, the pulse almost imperceptible, but the patient lies awake, breathing with great effort.

In certain forms of death due to the failure in respiration, coma

may be delayed until the last few minutes. This occurs in affections causing stenosis of the trachea or bronchi; in croup and in bronchopneumonia of children, the patient will remain conscious, struggling with all his strength for breath. This also occurs in adults, with severe bronchial asthma, tumors of the mediastinum, laryngeal stenosis from whatever cause, enormous pleural exudates, etc.

To the attendants this mode of death has usually a very appalling effect. The physician from the pulse may estimate the hours of life, and yet the anxious relatives and friends can scarcely believe that death is so near; the movements may be vigorous and speech almost continuous, when suddenly the patient may cry out, or take a deep gasp, or make a struggling effort, then sinks back lifeless,

EDITORIAL COMMENT.

Report of the Commission Appointed to Investigate the Cases of Tetanus Due to Antidiphtheritic Serum.

In another place in this journal will be found an abstract of the report made by the experts who were appointed by the Health Department and Coroner to investigate the deaths due to diphtheria antitoxin. The great calamity has been traced definitely to the presence of tetanus toxin in the serum; no one can study this report without being impressed that the work of the commission reflects great credit on the members; they did their work carefully and with a scientific exactness, which can bring forth only admiration from students in this department of science. Contrast this report with that made in Italy about a year ago; in that epidemic nothing definitely seemed to have been determined as to the actual source of the toxin.

Another general lesson is to be learned from this report, that deserves more than a reference, and that is the triumph of modern biologic methods. It proves that the enormous labor bestowed on intoxications and antitoxins has formulated positive rules and that the science of microbiology has a sure foundation; moreover while the accident is to be deplored, our confidence in the antitoxin is really increased, for the conviction is strengthened that proper precautions can entirely prevent such untoward results.

This lamentable incident should have a world-wide influence, in that all those engaged in the manufacture of antitoxin will perceive the necessity of surrounding the preparation of the serum with all scientific precautions. The report definitely demonstrates that tetanus toxin can be kept from contaminating the serum.

Henceforth physicians who use antitoxin will be in a position to put certain questions to the manufacturers: as, What precautions do you take to prevent tetanus intoxication in the horse? What precautions are taken to test the reliability and purity of the antitoxin? The practitioner will expect that the horse used to furnish the serum shall be properly immunized against tetanus; that a careful examination of the animal will be made before the serum is drawn; that the serum shall be carefully tested for its possible toxic, as well as its antitoxic potency before it is issued.

Municipal Manufacture of Antitoxin.

This naturally leads to a consideration of the subject of the manufacture of antitoxin by the government of a city. There can be no doubt that the motive of supplying antitoxin to the poor free of charge is very commendable, but it is questionable that a reliable serum can be furnished with the usual funds that a city appropriates for this purpose; the numerous precautions to be taken, the many tests to be made, the employment of skilled persons in every department—all this entails an enormous expense.

It would, therefore, seem more expedient to buy the serum from a reliable manufacturer, who, pressed by a world-wide competition, is forced to take the utmost precautions to insure the potency and harmlessness of his biologic products.

Rather than manufacture the serum, each city should have its bacteriologist test the various biologic products offered for sale. This would serve as an extra precautionary measure to insure the non-toxic character and the antitoxic potency of a given serum; with this double test, the manufacturer and the state, such lamentable results as shocked St. Louis in the last few weeks would be unknown.

The Coroner's Verdict.

In his verdict the Coroner reviews the facts of the deaths due to tetanus following the administration of diphtheria antitoxin. From the evidence obtained from the testimony, and the report of the bacteri-

ologists, he concludes that serum was drawn from a horse suffering from tetanus and issued without the proper tests being made to determine its potency and harmlessness. The verdict concludes as follows:

"The presence of tetanus toxin in the diphtheria antitoxin shows negligence on the part of the Health Department in the preparation of the said diphtheria antitoxin and in the issuance thereof."

The verdict has been criticised in that it does not fasten the guilt of the negligence on a particular person; but it is questionable whether he could have done this, since the Coroner had no law or precedent to guide him in his investigation. It is generally felt that the procedures in the manufacture of the serum had certain defects, which were the result of insufficient funds to carry on the work in the most approved manner.

It is reported that the Board of Health and the City Council will continue the inquiry with the object of fixing the responsibility on the guilty individual.

The Biologic Lessons Learned from the St. Louis Catastrophe.

In addition to the demonstrations that certain procedures are necessary in the manufacture of the serum in order to insure its purity, the report of the bacteriologists contains several statements which either corroborate known phenomena regarding tetanus, or are actual additions to the science.

1. Tetanus toxin when injected hypodermatically requires an incubation period of from three to seven days, according to the dose, before tetanic symptoms are produced.

This is in accord with experimental tetanus and has given rise to endless speculation.

2. No special morbid changes are found after death in tetanus intoxication.

3. At the height of the disease tetanus toxin is very rarely demonstrable in the fluids of the body.

4. An organism may die of tetanus and all the fluids of the body be loaded with antitoxin. The antitoxin is powerless to separate the toxin from its attachment to the nerve cells.

The conclusion is that one must not expect very much from antitoxin injections when the disease is well developed. Intramedullary

and intracerebral injections can, therefore, accomplish no more than subcutaneous injections.

5. The relative susceptibility of the human organism to the tetanus toxin stands, as compared with guinea pig, 0.83 to 1.

This fact is new, since hitherto, no opportunity has offered itself to establish this point. The relative susceptibility of the human being is about one half that of the horse.

Municipal Control of Tuberculosis.

The action of the St. Louis Medical Society in opposing certain proposed municipal legislation in regard to tuberculosis should by no means be interpreted that the medical profession of St. Louis do not regard proper legislation as advantageous. The objection seemed to the proposed law was that it subjected individuals and families to very disagreeable conditions without adequate return.

The mere registration and occasional fumigation can do little good in the control of consumption. While most of the students of tuberculosis agree that compulsory notification presents many advantages in the fight against the "white plague," many objections can be urged against. To make compulsory notification really effective, means must be on hand for the isolation of the patient; sanatoria must be provided, to which patients may be removed, and funds must be provided for the thorough disinfection of infected dwellings. An article dealing with this whole subject will appear in the *COURIER* in an early issue.

Law to Prohibit the Wearing of Corsets.

The daily press report that Dr. Marechale is making a strong effort to introduce a bill into the Chamber of Deputies, Paris, placing the manufacture of corsets under state control. The doctor claims that the feminine race has woefully degenerated physically and morally through using these instruments of torture.

Such radical measures may be necessary in a country where the population is diminishing rapidly, but we fail to see how the placing of the manufacturers in France under state control will remedy the evil; this is pre eminently an evil that can only be remedied by

education and popular feeling. It is very much the same in the case of shoes; no sort of general legislation can prevent the young lady from purchasing shoes two numbers too small for her.

Diagnosis or Diagnostics.

Objections have been raised to the term diagnostics, but careful thought will show that diagnosis is both an art and a science. No amount of book learning can entirely supplant that acquired skill displayed at the bedside by the experienced physician in unraveling the nature of a morbid process. Each case needs special rules, hence the science is distinct from the actual practice. We prefer, then, to apply the term diagnostics to the science that teaches the general rules used in the study and analysis of disease phenomena, while diagnosis is the actual practice. The term diagnosis also signifies the completed deductions as to the nature and etiology of a disease.

SPECIAL ARTICLE.

Report of the Commission Appointed to Investigate the Cases of Tetanus in St. Louis, Following the Administration of Diphtheria Antitoxin.

By B. MEADE BOLTON, M.D., C. FISCH, M.D., and E. C. WALDEN, M.D.

(*Abstract.*)

It was impossible to investigate independently in each case on account of the small quantity of serum in some bottles, so the serum was tested conjointly, and insofar as possible independently. All material obtained from autopsies was studied by each, and the results invariably tallied.

The experiments were directed to learn:

I.—Whether pathologic lesions could be demonstrated, revealing the characteristic picture of tetanus.

II.—Whether tetanus could be produced from the pathologic material obtained at the autopsies and during life.

III.—Whether the serum, dated August 24, was the cause of the outbreak.

IV.—Whether all serum, dated August 24, had the same toxic properties.

V.—Whether the disease was caused by an infection, or an intoxication.

VI.—Whether any difference could be noticed between the serum dated August 24 and the the serum dated September 30.

VII.—What the toxic strength of the serum was.

I.

The members of the commission saw a number of the patients, *intra vitam*, and so convinced themselves of the diagnosis except in a case of Dr. Friedman's, which recovered. The *incubation* period in the cases under the observation of the commission was *five to seven days*, death ensuing in the fatal cases three to five days later, taking for granted that the infection or intoxication took its origin from the injection of the diphtheria antitoxin made in all of the cases. In no cases were any wounds or other interruptions of the continuity of the epithelial surface of the body observed, except those caused by the entrance of the canula, and these points were *without inflammatory* reaction in all of the cases.

Out of the five autopsies attended, in only two cases were changes other than of a tetanic nature found. In one there was ample macroscopic evidence of a simultaneous scarlatinal infection—characteristic desquamation, desquamative nephritis, fatty myocarditis, etc.; while in the second case, lesions of the kidney (fatty infiltration of the tubular epithelium), and of the liver (extensive fatty changes) were apparent, and most likely due to the diphtheria toxin. With the exception of these two cases, no macroscopic pathologic changes could be found aside from the general and uniform engorgement of all the viscera, sometimes of the lungs, and always of the central nervous system.

This engorgement was always pronounced in the venous system; in some cases extensive capillary injection and even the formation of petechial hemorrhages could be observed. Pieces of hemispheres, basal ganglia, pons, medulla, and cervical cord microscopically revealed nothing more than macroscopic inspection. In one case the area of skin surrounding the site of injection was removed and examined microscopically and bacteriologically. The microscope showed only intense hyperemia of all the vessels of the skin, subcutaneous tissue, and abdominal muscles; while aerobic and anaerobic tubes in-

oculated with material from the specimen remained sterile. The attending physician, however, had injected into the same place before death a solution of bichloride of mercury.

Numerous sections made from the cord and stained mainly after the Nissl method showed a beautiful picture (in numerous ganglion cells, and especially the large motor cells of the anterior horns,) of the so-called *chromatolysis*, swelling of the nucleolus, obliteration of the processes, etc. It seemed, however, there was not that degree of intensity, that is, the outcome of inoculation experiments in animals or in the ordinary cases of human traumatic tetanus.

These specimens, prepared according to the Weigert formula, showed no apparent changes. If the whole of this is considered, it is seen that in all of the post-mortems made, nothing was discovered that could justify the assumption that the death of these patients was due to some other pathologic process, even in the cases noted, the changes were not adequate to be considered necessarily fatal. On the other hand, these investigations do not give any direct and incontrovertible evidence that the cause of death was tetanus, although the clinical evidence alone was certainly sufficient to remove any doubt.

II.

An account of the rapidity of absorption of tetanus toxin in the human organism and their union with susceptible cells, and for the further reason that most of the patients had received copious injections of anti-tetanic serum, the investigators could not get reliable results. Thus, in the Stern case, there was an excess of circulating antitoxin, as demonstrated by his cerebro-spinal fluid antagonizing a fatal dose of tetanus in a mouse, the counterpart of which died from a like dose, having received *no* cerebro-spinal fluid (antitoxin).

III.

The animals receiving the tetanus antitoxin, together with the toxic serum recovered, while those receiving the toxic serum alone died with typical symptoms of tetanus.

IV.

It will also be seen from appended tables that, while some of the serum dated August 24 was toxic, other samples labeled August 24 were found to be perfectly harmless.

V.

The result of the experiments demonstrated unquestionably that none of the serum examined contained the organism of tetanus, either in the active or in the resting stage (spores). On the other hand, the experiments showed that those samples of serum which caused tetanus contained the tetanus toxin pre-formed.

VI.

The results proved that the toxic serum dated August 24 and the serum dated September 30 were identical, and that the non-toxic serum dated August 24 could easily be differentiated from it by other properties than harmlessness—differences in appearance, absolute weight, specific gravity, spectrum band and freezing point.

VII.

Briefly, the dose 10 cc. of the serum contained not much more nor less than the single fatal dose of the tetanus toxin. In order to ascertain the minimal fatal dose of the serum for guinea-pigs, four animals were taken and were given $\frac{1}{10}$, $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of a cubic centimeter of the toxic serum from bottle IV. From preliminary experiments it, it had been demonstrated that 1 cc. was fatal to a full-grown guinea-pig. The animals receiving $\frac{1}{2}$ and $\frac{3}{4}$ cc. respectively, died within three days, with all the characteristic symptoms of tetanus. The animal receiving $\frac{1}{4}$ cc developed all the symptoms of tetanus, but died some hours later than the foregoing. The symptoms in the case where but $\frac{1}{10}$ cc. was injected, did not develop so rapidly, but the animal died within five days with typical symptoms.

By these experiments it was determined that the minimal fatal dose of this serum for a guinea-pig was $\frac{1}{10}$ cc.

From this very interesting deduction can be drawn as to the smallest amount of tetanus toxin fatal to a human being. If we consider 25 kilos the average weight of the children who died from tetanus, and that 10 cc. of the serum proved fatal in all cases, except in those in which tetanus antitoxin was administered, an approximate computation can be made.

If, then, we reduce the amount of toxin necessary to kill a guinea-pig, and, on the other hand, that necessary to prove fatal to a human being of 50 pounds weight, we find the relation of their susceptibility is 1 to 0.83; or, if we take the horse, with double the susceptibility of the guinea-pig, we obtain for the human being a susceptibility of about half that of the horse.

CONDENSED TABLE.										
EXPERIMENTS ON ANIMALS.										
Bottle Serum No.	Date.	Toxic or Non-toxic.	Mean Absorbate Weight.	Titrated with Silver Nitrate for Chlorine. Point Delta.	Antitoxic Strength.	S-p. Gr.	Reaction with 0.5 cc. Serum Litmus and Phenolphthalein.	Date Injected.	Animal.	Results.
IV.	Sept. 30.	Toxic.			10 cc. = 750 units.			Nov. 2.	Mouse.	Scoliosis.
V.	Sept. 30.	Toxic.		— 0.605.				Nov. 2.	Mouse.	Died Nov. 6; tetanus.
VII.	Aug. 24.	Non-toxic.	2.027 gm.		10 cc. = 500 units.			Nov. 2.	Guinea-pig.	Well Nov. 14.
XII.	Aug. 24.	Toxic.	2.032 gm.					Nov. 2.	Guinea-pig.	Died Nov. 6; tetanus.
XIII.	Aug. 24.	Toxic		1 cc. = 0.8 cc. Stand. sol.			0.75 cc. of a 1.200 per cent sol. NaOH.	Nov. 2.	Guinea-pig.	Died Nov. 5; tetanus.
XIV.	Aug. 24.	Toxic.			10 cc. = 750 units.	1032		Nov. 2.	Guinea-pig.	Died Nov. 8; tetanus.
XXVIII.	Aug. 24.	Non-toxic.		— 0.575.			0.95 cc. of a 1.200 per cent sol. NaOH.	Nov. 5.	Mouse.	Well Nov. 14.
XIX.	Aug. 24.	Non-toxic.		— 0.570.				Nov. 1.	Guinea-pig.	Well Nov. 14.
XXXVII.	Sept. 30.	Toxic.						Nov. 2.	Mouse.	Very stiff; slow recovery.
XXXVIII.	Aug. 24.	Non-toxic.	2.2098 gm.					Nov. 2.	Guinea-pig.	Well Nov. 14.
XXIX.	Aug. 24.	Non-toxic.		1 cc. = 1.1 cc. Stand. sol.		1028.5 1029	0.9 cc. of a 1.200 per cent sol. NaOH.	Nov. 2.	Guinea-pig.	Well Nov. 14.
XXXI.	Sept. 30.	Toxic.		1 cc. = 0.8 cc. Stand. sol.		1031.5 1032	0.7 cc. of a 1.200 per cent sol. NaOH.	Nov. 2.	Guinea-pig.	Well Nov. 14.

CONCLUSIONS.

The serum dated September 30 and some dated August 24 was the cause of the recent deaths from tetanus in the cases where this antitoxin was used. The antitoxin was sterile, but contained the toxin of tetanus bacilli in considerable amount. There were two different sera dated August 24, one doubtless being that drawn September 30, which was issued without being tested by the proper methods and put in bottles labelled August 24. The serum of September 30 was issued before there was time to have made tests, just as serum dated October 23 came into possession of the committee November 1. The possibility of latent tetanus in the horse "Jim" is denied, and, therefore, the serum actually drawn August 24 was free from tetanus toxin, but that drawn September 30, during the incubation period, was toxic, and would have been found so if proper tests had been made.

Tetanus Due to Vaccination.—Considerable interest is attached to an outbreak of tetanus among the children of Camden, N. J., due to vaccination, following as it does the recent epidemic in St. Louis from antidiphtheritic serum. More than seven deaths have been reported. This will furnish additional matter for the antivaccinationist; it must therefore be considered very unfortunate, since variola seems to be on the continual increase in the United States, and vaccination is notably neglected.

The direct cause of this occurrence has not been determined. Two theories were offered: First, that the wounds made at the site of inoculation became infected with the tetanus bacillus; and, second, that the virus became infected and developed in the tubes, which would furnish the necessary anerobic conditions for the growth of the bacillus.

The daily press reports that no bacilli were discovered in virus taken from the same lot. Yet it is difficult to conceive how such a large number of children could have been infected by the operation of vaccinating or subsequently.

DIAGNOSTICS.

The Diagnosis of Fluid Within the Abdomen.

Free fluid in the abdominal cavity when in fairly large quantities is readily demonstrated by the size of the abdomen, by dulness on percussion in the dependent portion, and finally by the sense of fluctuation obtained by palpation. In order to prevent the abdominal walls from vibrating, an assistant should firmly press on the median line with the ulnar edge of his hand. One hand is placed on one side while the other gives the opposite side a sharp tap; a wave will be felt moving across the abdomen if fluid is present.

Much more difficult is the demonstration of *encapsulated fluid*; this is easily mistaken for a soft tumor. A new method to aid in diagnosis is therefore welcomed. Clark (*U. P. Med. Bul.*, May, 1901) suggests a *trimanual method of percussion*. The tumor is confined as closely as possible between the two examining hands, while an assistant performs percussion; a few light quick taps made over one hand will give a sensation of a wave passing to the other hand; in this way the fluid in a distended gall-bladder, hydrosalpinx, pyosalpinx, appendiceal abscess, or other collection of fluid may be demonstrated.

Tympanitic Note at the Base of the Lung Due to Subphrenic Abscess.

Dullness at the base of the lung and hyperresonance in the infraclavicular and axillary regions (Skodaic resonance) are the well-known signs of pleuritic effusion; similar physical signs are present in subphrenic abscess, except that the dullness and hyperresonance extends somewhat lower. Blake (*Annals of Surgery*, November, 1901) gives Janeway the credit for pointing out this sign. He reports two cases; there was bulging of the lower ribs; a peculiar tympanitic resonance was discovered over the lower dorsal part of the lung, in a patient whose symptoms suggested pleurisy; below this, flatness was present on percussion. An operation revealed a large abscess below the diaphragm; the tympanitic note may be explained in the same way as Skoda's resonance—compression of the lung by the upward bulging abscess.

Flexion of the Thigh.

Persistent flexion of the thigh occurs in all acute and chronic diseases in and about the hip joint. It has been shown to be present often in those conditions which produce psoas contraction; thus it is found in perinephritis, perityphlitis, appendicitis at times, and often in certain pelvic inflammatory conditions. Flexion of the thigh associated with a femoral hernia, according to Kolliker (*Centr. f. Chir.*) indicates that the appendix forms a part of the hernia; the appendix is adherent in the hernial sac. Muus has also described such a case, (*Ibid.*, the patient had a femoral hernia for many years; pain developed over the hernia, and persistent flexion of the thigh ensued; at the operation a healthy appendix was found adherent in a small sac in the femoral canal; with the removal of the appendix the flexion disappeared.

An Early Sign of Infantile Pneumonia.

Dr. Weill calls attention to what he considers a new sign of infantile pneumonia. It is a lack of inspiratory expansion in the infraclavicular region of the affected side; he claims that it is invariably present and occurs early in the course of the disease; absence of expansion, he says, is witnessed in various other pulmonary affections, but in them it corresponds to the situation of the disease, while in pneumonia it is limited to the infraclavicular region, and is even more marked in cases in which the inflammatory process is confined to the lower portion of the lung.—*New York Medical Journal*.

The Sense of Smell as an Aid to Diagnosis.

That the sense of smell may be used as an aid to diagnosis is not a new conception. The distinctive odor of measles is among the best known examples; the acid odor of rheumatism is also familiar; perhaps more careful study of odors might lead to interesting results; some clinicians claim to perceive a distinctive odor about consumptives. Ferran (*Ibid.*) has shown that this odor is produced by a saprophytic form of the tubercle bacillus; he uses for a special test a mixture of blood serum and the suspected sputum; ten cc. of the serum of the horse or sheep are mixed with two or three cc. of the sputum, and placed in an incubator for thirty six hours; at the end of this time an odor of spermine will be found perceptible. This is positively diagnostic of tuberculosis according to this author, even in cases where the tubercle bacilli can not be found.

Heat as a Test of the Presence of Pus.

An accurate test of the presence of pus in deep-seated inflammation is very much needed. From the standpoint of the therapist the determination of this fact is almost a necessity; but it must be admitted that we possess no such sign at present. Lewin, however, has observed that in inflammation of the knee joint alleviation of the pain followed warm applications (*New York Medical Journal*), if pus was present, however, the pain was aggravated. His observations in appendicitis corroborate this test; if this simple test is confirmed by others, it will be extremely valuable; it is to be hoped that the presence of iodophilic leucocytes, may also prove a valuable sign of pus.

Lymphocytosis in Pertussis.

An absolute increase of the lymphocytes occurs in lymphatic leukemia and sarcoma involving the bone marrow. Of great diagnostic import is the fact that a leucocytosis, which is composed principally of an increase in the lymphocytes, is constantly present in pertussis. Severe convulsive coughing which often follows influenza may thus be differentiated from pertussis by an examination of the blood. It must be remembered however that a relative increase of the lymphocytes usually exists in tuberculosis; a normal excess is also present in infancy; in the various acute infections of infancy a relative slight increase may occur.

Clubbed Fingers.

Enlargement of the distal portions of the fingers, constituting the so-called clubbing of fingers is usually associated with chronic venous congestion. This may depend on a variety of causes; the most common in children is congenital or acquired disease of the heart; with a blueness of the skin, clubbed fingers, and subnormal temperature at once suggests congenital cardiac malformation, in a young child.

In chronic valvular disease this sign is sometimes lacking. Very interesting is the presence of bulbous enlargement of the terminal phalanges in certain pulmonary diseases; chronic bronchitis, emphysema, chronic phthisis, and extensive pleuritic adhesions may be followed by this change in the fingers. When, in addition, enlargement of the hands and feet are present, the affection is termed pulmonary osteo-arthritis; the ends of the long bones are also enlarged. This remarkable condition is associated with sarcoma, phthisis, bronchitis, and empyema of the lung.

The Clinical Significance of Eosinophile Leucocytes.

Little diagnostic value is now placed on the presence of the eosinophiles; it is known that they are greatly lessened in number at the height of the attack of certain infectious diseases, as pneumonia, typhoid fever, acute rheumatism, meningitis, septicemia, tonsillitis, etc.; their presence in trichinosis in enormous numbers is very characteristic; they are found in the sputum in a great variety of pulmonary diseases. In many vesicles of a variety of skin diseases they are found to be present, consequently, they are not characteristic of pemphigus as formerly supposed; they are also found in gonorrheal pus.

Vertebral Tenderness.

Tenderness along the spinous processes of the vertebra, usually in one or more spots, does not always signify neurasthenia—spinal irritation. It is found in certain definite morbid conditions of the internal organs; in ulcer of the stomach a point of tenderness over or to the left side of the dorsal spinous process is common. Boas has pointed out that cholelithiasis is often accompanied and followed by a sensitive spot over one of the lower dorsal spines; in certain disorders of the intestine, pain in the back, and tenderness along the lumbar vertebra is sometimes observed. In Pott's disease an area of tenderness is often found over the affected vertebræ; a similar area may be found over the diseased area in transverse myelitis. Hyperesthetic spots along the spine are among the most common symptoms of hysteria; when associated with intercostal pain and points of tenderness it is frequently difficult to differentiate from intercostal neuralgia. Finally rheumatism, arthritis deformans, typhoid spine, vertebral periostitis, and sarcoma of the bone must rarely be considered.

The Significance of Oxaluria.

The presence of crystals of oxalate of lime is frequently discovered in routine microscopical examinations of urine, but their practical significance is by no means certain. Certain clinicians (Bird, Prout, etc.), claimed that a special disease, the oxalic diabetes, existed, but later researches have not confirmed this. Helen Baldwin (*Journal of Experimental Medicine*, 1900) after a thorough investigation finds that the clinical import of these crystals to be of little value. It is known that these crystals are found in disorders of the stomach accompanied by achlorhydria; it varies with the ingestion of foods, and the concentration of the urine; certain fermentative processes of the intestine are associated with an increase of oxalates.

THERAPEUTICS.

In Charge of
W. L. JOHNSON, M.D., and A. LEVY, M.D.

Treatment of Pneumonia.

James E. Wilson (*Philadelphia Medical Journal*, November 2, 1901), after quoting Trousseau's observations of nearly a half century ago, on the diversities of this disease, and the uncertainties of any treatment, and pointing to the conclusion that patients got well in some cases, in spite of, and not because of heroic doses of digitalis, proceeds to outline his treatment:

First, however, anti-pneumococcus serum has not yielded satisfactory results. Moreover, hydrotherapy has disappointed him.

The expectant treatment, as advocated by Dietl, Niemeyer, Bourgeois, and in a measure by Flint and others, is in great favor.

In his service at the German Hospital of Philadelphia, the plan is to give chiefly milk and light broths. Junket, custard, and light gruels are given, if the patients care to take them. In private, a little ice cream and perhaps raw or stewed fruit, also grapes may be given. Water in abundance, but not more than two ounces at the time. The patient is sponged night and morning with water, the temperature of which is regulated by his sensations.

If the temperature exceeds 104°F., cold sponging may be repeated, at intervals of two or three hours. Early, ice bags are applied, to the affected side. Alcohol is given in the majority of cases—ordinarily not more than four to six ounces daily. Calomel purge early; morphia, hyperdermically, if great pain, and tablets of Dover's powder, two or three hours usually, throughout the greater part of the attack, rarely expectorants, constitutes the routine treatment.

Digitalis, if pulse irregular; strychnine, as cardiac tonic frequently, and the nitrates, especially nitroglycerine, for a laboring right ventricle. Blisters are used only in cases of delayed resolution. The greatest care is observed at the crises, and there is no hurry to permit the patient getting out of bed.

LeLancy Dochester, of Buffalo (*Journal of the American Medical*

Association, November 9, 1901), in an article on the same subject, observes that death takes place, aside from complications, either from the intensity of toxemia or from interference with oxygenation from too extensive involvement of lung tissue. Failure of circulation, due to myocardial degeneration is the most common cause of death. This is due to profound toxemia or over-taxation from obstruction in the lung.

The prime therapeutic measures for relieving this toxemia are opening up the bowels and skin, and keeping them active.

Calomel, 0.50 gram, followed by a saline laxative, should be given at the onset, and repeated for the purpose of elimination, and further relieving the distension of the right heart, when indicated.

The most efficacious and least harmful manner of keeping the skin active, is by the proper use of the hot mustard foot-bath.

The tub may be put into the bed, and the baths repeated at four hour intervals. The sweating thus produced, in connection with stimulation, is the most important of the therapeutic measures.

The author uses strychnine, alcohol, the carbonate of ammonia, or aromatic spirits of ammonia, combined with liquor ammonii acetatis, and administered in mucilage or milk.

He believes in leeches, wet cups or dry cups, over the area that gives evidence of a beginning congestion; relegates the poultice jacket to the dark ages, and finds no relief following the application of ice.

If, in spite of these local measures to relieve congestion, the process still persists, and we begin to have evidence of over-distension of the right heart, such as increasing cyanosis, the pulse losing its tension and becoming small and sometimes irregular, the liver enlarged, the veins pulsating, and the area of cardiac dullness increasing chiefly to the right, whether a murmur of tricuspid insufficiency is present or not, prompt relief can usually be obtained by the withdrawal of eight, ten or twelve ounces of blood from the median vein of forearm.

Dickinson (*Ibid.*), advocates veratrum viride in the early stages of pneumonia, believing that it is sometimes capable of aborting the disease.

Galvanism in Uterine Hemorrhage.

Walker recommends, where no indication exists for a surgical operation, negative pole over abdomen, positive pole in uterus.

A Cure for Consumption by the Inhalation of Medicine Through the Medium of Hot Air,

J. Bryson Sloane, of Detroit, Mich. (*Denver Medical Times*, October, 1901), describes a simple method of heating air by means of an asbestos mat over a gas jet. The heated air then passes through a sponge medicated as described, for consumption or other respiratory diseases. He has devised an instrument, a cut of which he gives, but no description, which he claims has given great satisfaction to himself and to his patients.

Treatment of Diabetic Coma.

Heinrich Stern (*Journal of the American Medical Association*, December 8, 1900). Stern's reports of success in the cases of diabetic coma, treated by him, lend support to the theory that coma in diabetes is due to one or more organic acids. He performs enteroclysis, with a mixture of precipitated calcium carbonates, two to six grains, to the liter of warm water at 42°C, a little gum arabic being added, to suspend the calcium carbonate. The treatment is repeated every three or four hours. The rather far-fetched theory is that the calcium carbonate will be broken up with the evolution of carbonic acid. The latter being absorbed and disseminated, renders inert the coma producing acids.

Treatment of Gonorrhea with Adrenal Extract.

Geo. O. Jarvis (*International Medical Magazine*, September, 1901). In an article entitled "The Physiologic Treatment of Gonorrhea," the author recommends the use of the following prescription:

R. Ext. adrenal..... ʒij
Cresol..... ℥v
Aq. et glycerin..... ad ʒj

M. et Sig.—Inject ʒj of the solution.

He had good success with this, especially in cases where there was profuse discharge, and constitutional disturbance, fever, pains in joints, etc. He attributes the good effect of the drug to its power of contracting the capillaries and lessening congestion, thus improving drainage of the urethra, and facilitating local application. He does not attribute the effect to the cresol, as his results are far better than could be expected from that drug alone. It is used only to preserve the adrenal extract.

Timely Prescriptions.

Complicated formulas will rarely prove advantageous.

For distressing night cough in children;

R Syr. lactucarii..... ʒij

Sig.—Teaspoonful on retiring, repeated once or twice if necessary.

During day, troches of lactucarium may be of service.

For muco-purulent rhinitis:

R Acid sulphurici, diluti..... ʒj

Sig.—Five (children) to thirty (adults) drops in sweetened water.

Usually the character of secretion rapidly returns to sero-mucus, and then ceases.

For scarlet fever:

R Pilocarpine muriat..... gr. $\frac{1}{60}$ — $\frac{1}{8}$

This dose until salivation is marked; calomel in divided doses.

For grip, at onset, eliminate by means of fractional doses of pilocarpine and calomel.

For pains and aches of grip:

R Phenacetin.....

Cinchonidia salicylat..... aa gr. ij ss

Det. Dos: tal xij Sig.—Two first dose; one every four hours.

Tonics during convalescence.

For bronchitis. Mustard drafts over sternum for relief of rawness and to lessen cough. Also:

R Ammon carbonat..... ʒ ij

Mist glycyrrhizæ Com..... ʒiv

M. Sig.—ʒij every three or four hours.

Dietetic Treatment in Typhoid Fever.

Fischer (*Ibid.*) gives large quantities of water with raw egg-white, and infuses large quantities of normal salt solution for exhaustion. The injection of the salt solution is also valuable for the toxemia. Rectal feeding is indicated where stomach is rebellious. First flush rectum with salt solution, then inject one ounce thoroughly peptonized milk, to which is added one ounce of starch water, every four hours. The white of an egg may be added to the salt solution, and thus have subcutaneous feeding. For thirst, carbonic acid water and water acidulated with hydrochloric acid may be given.

The Therapeutic Value of Alcohol.

Leon L. Solomon (*American Medicine*, September 21, 1901). The author first discusses the care and discrimination necessary in selecting the drug, ascribing most of the baneful effects to whiskies and brandies containing fusel oil and other noxious ingredients. He dilates upon the subject of dosage and time of administration, things not usually properly observed in the ordinary use of alcohol. Then follows a detailed consideration of the physiological effects and therapeutic uses. Solomon considers alcohol the most remarkable stimulant that we have, and shows a very wide field for its use, but he insists upon intelligence and discretion in each particular case. Nothing distinctly new is deduced, but altogether, it is a logical and instructive treatment of a medicinal agent often much abused, and as often entirely neglected.

Hygienic Treatment of Chronic Constipation.

In a prize essay Knopf (*New York Medical Journal*, October 26, 1901) considers the following rules advisable: (1) Clean the teeth after each meal; (2) have diseased teeth promptly treated; (3) take meals at regular times; (4) take time for meals, eat slowly, and chew food well; (5) not to read or do difficult thinking while eating; (6) not to eat in workshops or office; (7) not to eat when tired or exhausted; (8) not to begin work, mental or physical, immediately after eating, but rest; (9) use a water-closet that is well aired, well lighted, cool in summer, comfortably warm in winter; (10) use soft toilet paper. Mechanical measures are massage, walking and other well known exercises.

Cacodylate of Sodium.

The French are at present enthusiastic over this drug. Lannois (*Revue de Thérapeutique Médicale Chirurgie*, LXVIII, No. 5) states that three cases of chorea, treated by him with cacodylate, made complete recovery in from one to three weeks. He used the drug hypodermically, in dose of one-third to two-thirds of a grain.

Gautier (*Journal des Praticiens*, July 13, 1901) noticed good effects from this drug in tuberculosis, and in many cases, he thinks, a cure, or at least an arrest of the disease, was effected. He gives it hypodermically; dose, one-half to one and one-half grains, continuing the administration daily for a week, and then giving it during alternate weeks. He gives at the same time general tonics.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of September 5, 1901; Dr. Norvelle Wallace Sharpe,
President, in the Chair.*

Specimen of Lipoma.

DR. F. G. NIFONG presented a specimen of a lipoma removed from Mrs. D., aged 58 years, married. Family history: Two brothers died of consumption, father had malaria and mother heart disease. The patient had never had any serious illness; her only trouble was at childbirth; she bore six children. At 15 she began to menstruate and between that and her 16th year she had a severe "spell" of abdominal pain, a swelling in the abdominal wall and a rupture of the wall between the umbilicus and the pubis; this discharged a glairy, white fluid for six months before it healed up. After this she enjoyed good health until three years ago when she began to have pain in the abdomen; she was also attacked with what seemed to be an epileptoid convulsion; the first attack came on about four o'clock in the morning; this happened several times. She manifested also some bladder trouble; the severe abdominal pains continued; the last attack was about ten days ago, when she came to St. Louis. On examination a tumor was found in the lower portion of the abdomen; the speaker thought this tumor might be attached to the bladder, as there were bladder symptoms, with pus in the urine, but no casts or sugar. The bladder would not hold more than five or six ounces; the pain was quite severe. The tumor was removed to-day from the abdominal wall; the tumor was found to be continuous with an omental hernia passing through a ring the size of a silver dollar. The omentum was tied off and dropped back into the cavity and the ring closed.

The question is, was this tumor of omental origin in the first place, and if not, where did it originate? It is a rather unusual place for a lipoma, although, of course, they may be found wherever there is

connective tissue; its intimate connection with the omentum seems to point to omental origin. You will notice, though, that the tumor's consistence is quite different from omental tissue—being firmer, more fibrous, less vascular, etc.

DR. H. S. CROSSEN asked if the tumor was nearer the pubis than the umbilicus; did it seem connected with the peritoneal cavity; was there any evidence of a peritoneal covering inside the sac?

DR. NIFONG replying, said it was nearer the pubis; it was separated from the cavity by a distinct thick hernial ring; it was imbedded in the abdominal wall; was outside of the peritoneum and was peeled out like a typical lipoma until the hernial opening was reached, here I found it continuous with the omentum. Whether the omentum was simply a hernia under the tumor, which had adhered, I am not prepared to say. I think that, perhaps, the beginning of the trouble was a cyst which became inflamed—adhered to the abdominal wall and finally ruptured. This weakened the wall and afterwards an omental hernia developed and from this the lipoma; this tumor has been noticed for forty years but gave no trouble during the childbearing period—only during the last few years has she suffered severely. The intense pain was probably due to the partial strangulation of the omentocoele.

DR. W. E. SAUER read a paper (see page 424, of this issue,) on

Recurrent Laryngeal Paralysis due to Aortic Aneurysm.

DR. L. H. HEMPELMANN read a paper (see page 426,) on the same subject.

DISCUSSION.

DR. L. H. BEHRENS said both these cases were very interesting. In the case of Dr. Sauer's patient he was surprised that the existence of an aneurysm had escaped notice even as long as three years ago; the early recognition of aneurysm he had frequently discussed and thought it of great importance. He referred to an article (mentioned by him at previous meetings of this Society) in the *N. Y. Medical Journal*, which was taken from the *West Indian Medical Journal*, in which several famous London diagnosticians called attention to certain early symptoms of aneurysm, such as a sudden suffocation when thrown suddenly back in a barber's chair. One of the patients pre-

sented this evening states that he felt this sensation; the other case did not recall having such symptom but he had cervico-brachial neuralgia. Whenever there is a recurrent laryngeal paralysis we almost intuitively auscultate the chest to see if there is any pressure due to an aneurysm, because this is the most frequent cause of throat trouble such as we have here; the other symptoms in both cases are such as we usually find; the left pulse in one case is smaller than the right; in the other case there is no difference in the pulsation. We are often led to believe that we hear all kinds of murmurs and sounds in these conditions; it is more often that we do not hear anything typical of aneurysm and it is very difficult to make an early diagnosis of aneurysm unless we take into consideration the peculiar symptoms mentioned.

The treatment in these cases is very unsatisfactory; he recalled five cases seen in the City Hospital of aneurysm of the ascending and descending, and two in private practice last year, and no improvement was seen in any of them.

One case of aneurysm of the arch with symptoms similar to one of the cases shown this evening was given iodide until he was taking seventy drops three times a day and showed a marked degree of iodism; there resulted a slowing of the circulation, a relief of the painful symptoms, but the aneurysm continued to grow slowly and by pressure on the bronchi dissolution rapidly took place; there was no rupture, just a gradual suffocation. He had seen gelatin injected in several cases but no marked degree of fibrination took place; there is little to do but wait. If possible we should keep the patient in bed and away from all excitement; the diet should be modified so there will be no digestive disturbances and follow out the oft-repeated rules; in this way we may, at least, prolong life somewhat and make the patient fairly comfortable. Some cases are on record as having lived 15 to 20 years after first symptoms were observed.

DR. SAUER said he hardly believed the prognosis was quite as bad as Dr. Behrens had pictured, as there are cases recorded even with marked symptoms, that have lived 18 and 20 years.

DR. HEMPELMANN said the average duration given by Eichhorst was 16 months after recognition, though cases were cited that lived as long as 18 years.

The gelatine injections seem to do good in some cases and the

patient seems to feel better. Where the iodide is followed by improvement, however, he did not think there was any indication for other treatment.

He mentioned that the patient shown by him this evening was an inmate of the Mullanphy Hospital, and Dr. Senseney had seen the case with him.

DR. HOWARD CARTER exhibited some specimens taken from Coroner's cases. The clinical history of these cases was, of course, unobtainable as they were all post-mortem examinations. The first specimen exhibited was

A Perforated Uterus.

This was a case of abortion which came through the hands of a midwife. The uterus was shown to have been pregnant about three months; there was a general peritonitis with a perforation through the neck of the uterus and into the cavity of the peritoneum; there were two openings into the peritoneal cavity.

A Case of Pus Tubes and Ovaries.

This specimen was evidently taken from a prostitute. It showed a chronic pelvic peritonitis; the uterus had never been pregnant.

Diaphragmatic Hernia.

This is a rather unusual case. The patient was set upon by a number of boys and punched and kicked in the stomach. The hernial mass contains the transverse colon and nearly all of the large omentum. The rent in the diaphragm is small and strong adhesions had formed on each side. All the viscera were misplaced—the stomach and heart being forced over to the right side. The incarcerated colon contained fecal matter; there was no pus, but a large amount of fluid was present in the left pleural cavity into which the hernia had taken place. The patient lived three or four days.

Rupture of the Heart.

This is a very interesting specimen. The patient gave a history of feeling ill for several days, and went to his room in the hotel and died there. The pericardial sac was found filled with blood; along the septum was seen a scar; this really consisted of a number of minute holes entering the left ventricle; the heart was not opened. It is a very unusual condition; it is unquestionably a case of "broken

heart;" there was some fatty change in the muscle. The deceased was an old man who did little or no physical work.

Occlusion of Aorta by Atheromatous Deposits.

The heart is considerably enlarged and somewhat dilated; the amount of fat around it is greater than usual; the valves on the right side are comparatively normal; the mitral valve is practically normal; the aorta, however, is almost completely occluded by calcareous deposits; the entrance to the coronary arteries is, in some instances, occluded but the arteries themselves are not atheromatous.

The next specimen from the same patient, showed a
Severe Gastritis.

The next specimen showed a case of

Large Aortic Aneurysm.

This was probably a case of very long standing. The sack is filled with laminated clots of various size, of the consistency of shoe leather and varying in color from white to dark brown.

The next specimen was an

Enlarged Heart with Extensive Atheromatous Patches
extending into the abdominal aorta.

The next specimen was a

Hemorrhagic Infarct of the Kidney

from the same case.

DR. MORFIT was most interested in the specimens of ruptured heart and diaphragmatic hernia. The calcareous condition of the arterial trunks and coronary arteries, no doubt, were a strong factor in predisposing the heart to give away along the course of the coronary vessels. Nothing in the history of the case would lead one to discover the mechanical cause, whatsoever it may have been. He had been impressed lately by coming in contact with several traumatic cases of ruptured viscera where the external surface injury was little more than a slight bruise. Within the last few weeks Dr. Carter had done an autopsy on a coroner's case and found the small intestine torn square off a few inches above its junction with the duodenum. He recalled one recent case in which there was scarcely any injury to the integument, but blood in the urine led to the discovery, at operation, of a right kidney badly lacerated and fractured into several parts

The hernia was the second one of that variety he had seen. Dr.

Carter's case was evidently acquired through injury. The first case he had seen was of long standing, as evidenced by the thick edge of the ring in the left side of the diaphragm near the outer border of the central tendon. About twelve feet of small intestine with part of the colon was found in the thoracic side of the diaphragm and having been distended with gas gave rise to a resonant percussion note, which enabled the diagnosis to be made beforehand. In other respects a strangulated hernia through the diaphragm gives the same symptoms as a similar condition in other locations.

DR. R. B. H. GRADWOHL said the case of ruptured heart was especially interesting. The cause of the rupture might be determined by opening the organ and examining the wall; it might be due to a thrombosis of the coronary artery. The case of diaphragmatic hernia was also interesting; the solution of its nature would also be likely determined by a more careful examination, as to the existence of a congenital ring, etc. A case of this sort has been recently operated upon with success by Miculicz.

DR. JOHN GREEN, JR., asked if it was known what character of instrument was used in a case of perforated uterus.

DR. CARTER said he did not know. The midwife said she had not used an instrument; she said the fetus had been dead for several days when the patient first came to her; she said, however, she would have used instruments if she had known how to do so and had had them. The speaker said he did not mean to assert that the midwife used an instrument but that an instrument was used is unquestionable though by whom could not be ascertained.

DR. NIFONG mentioned a case of ruptured uterus seen in connection with his father. The woman had produced abortion upon herself by using some sort of instrument. The fetus was supposed to be dead as she was having hemorrhages, and they proceeded to curette; they soon took hold of what they supposed to be the cord and pulled on it, having gotten away a small fetus about three months old; after pulling on the supposed cord they found it to be intestine. In this quandry the uterus was cleaned out thoroughly, the intestine replaced as best they could through the opening in the uterus. There was profound shock and they expected the patient to die, but she rallied and went on to complete recovery.

DR. JOS. L. BOEHM mentioned three cases of ruptured uterus,

seen while he was interne at the city hospital. All the cases occurred in the practice of a certain midwife, who has since been sentenced to a term in the penitentiary. Dr. Nietert was present at the post-mortem examinations. The perforations in the three cases were always in the fundus, which led to the belief that a blunt curette had been used. He thought this similarity in the location of the perforation a peculiar coincidence and asked if this was usual and what had been the experience of other members in this respect.

DR. H. S. CROSSEN said he recalled a case of rupture of the uterus but was not certain that it followed an attempt at abortion. The patient was brought in the hospital about 11 o'clock at night, with her intestines hanging out between the thighs. She gave a history of having fallen from a wagon a day or two before and was attended by a midwife who supposed the patient was about to abort. The midwife found something but did not know what it was, and called a physician; the physician found the intestines in the vagina and sent the patient to the hospital. On examination the speaker found a large amount of the intestine outside of the vagina and without the mesentery; the mesentery had been stripped off and it appeared to him that considerable force must have been used in pulling down the intestine. He supposed, though he was not sure this is correct, that the midwife had pulled and kept on pulling on the intestine until she had gotten out quite a number of feet. In this way he accounted for the mesentery being stripped off; that, however, is a question. As the mesentery had been torn off and there was internal hemorrhage, he opened the abdomen and removed thirteen feet of small intestine and a large amount of the mesentery and did an end-to-end anastomosis of the several portions of intestines; the rupture was in the interior part of the uterus, just above the internal os; it looked very much as if a dilator had been forced through the anterior wall of the uterus because the opening was quite large; a small sharp curette would hardly make an opening large enough for this amount of intestine to escape. The patient did well for about five days, but developed peritonitis and died later. Post-mortem it was found the intestines had healed nicely—there was no leakage—but a small part of the mesentery sloughed, causing late peritonitis.

This case was reported in 1898; he simply mentioned it now in connection with the subject of ruptured uteri.

DR. L. DRECHSLER thought we should be careful about receiving ante-mortem statements of patients under these conditions. He mentioned a case seen in a private hospital where the patient stated that she had attempted an abortion upon herself. Post mortem showed that she had a peritonitis, due to a ruptured extrauterine pregnancy, the peritonitis not originating from the uterus itself—there was no lesion in the uterus.

Meeting of September 19, 1901; Dr. Norvelle Wallace Sharpe, President, in the Chair.

DR. GIVEN CAMPBELL read a paper (see page 407, this issue,) on

Muscular Dystrophy and Lingual Hemiatrophy.

After presenting patient he said, I might mention, in speaking of the clinical history of this patient (case of Muscular Dystrophy) that up to five or six years ago he was perfectly well. About that time he sprained his shoulder, as he expressed it; then he sprained his back. In neither case was the sprain the result of any special injury—rather coming of itself. Since then the shoulder and back have become progressively weaker. On applying for treatment, a week or so ago, he presented the typical deformity seen in dystrophy of the type of Erb, or the brachial-humeral type; in this type of dystrophy the disease commences about the time of puberty, or a trifle earlier, involving the muscles of the shoulder, the pectoral muscles, latissimus dorsi, rhomboids and serratus. The most marked deformity is often that which is called the "loose shoulder." At this point (indicated by a cross in front-view photograph) you will notice a protuberance, that is, the superior internal angle of the scapula—a rather unusual place for the scapula. In attempting to lift the patient by the shoulders you will notice that the shoulders are raised and the body not lifted; the upper fibers of the pectoral muscle are quite good on the left side, less so on the right side; there is quite a prominent lordosis; the muscles not affected by the dystrophy are unusually well developed. He has an uncle who has some weakness of his shoulders.

DISCUSSION.

DR. W. E. SAUER said in regard to the case of lingual hemiatrophy, that the inferior laryngeal nerve was the one involved, though

the superior laryngeal nerve on the other side appears to be involved. There was also some involvement of the soft palate and he believed the lesion must be central as the spinal accessory showed some involvement ; he said the text books described a condition in which one side of the tongue, the soft palate, the vocal cord, the sternocleido-mastoid and the trapezius were involved ; he had not examined the condition of the ear very closely, simply making an ocular inspection which showed a catarrhal condition to be present.

In this case the sensory nerves are intact in the larynx and he believed this had a bearing on the mooted question of the origin of these nerves. He thought it showed that the motor nerves come from the spinal accessory.

DR. M. A. BLISS said there still existed a great deal of confusion in regard to these cases and he felt very grateful to Dr. Campbell for showing these cases tonight. It was quite a long time before any very clear idea of the pathology of the various types became known and until recent times no very close differentiation was made. The custom of naming the types after the men who described them only served to make the confusion greater ; the various cases described have not been distinct clinical pictures. There has been a tendency recently to divide the types into spinal and muscular atrophy ; he believed that nearly all of these belonged to the family groups. Friedreich's ataxia belong in the same class. Frequently we see cases of atrophy occurring in one member of a family and hypertrophy in another member, and yet the essential pathological features may be the same ; the pseudo-hypertrophies are eventually followed by atrophy and loss of motor power. The case shown this evening he thought the most striking he had yet seen and the photographs brought out its well marked features very clearly.

DR. CAMPBELL, in closing, said the prognosis in the case of lingual hemiatrophy was bad for recovery of the use of that side of the tongue. The case is interesting as showing that a patient may use one-half of the tongue about as well as another person would the entire organ, as this this patient does. She is able to turn the tongue in either direction and uses it in eating and talking with perfect freedom ; the muscular tissue in the left half of the tongue is entirely gone ; there is no response to faradism or galvanism.

The prognosis in the dystrophy case, he said, depends very

largely upon the extent to which we can keep the patient on his feet. If allowed to remain inactive he will go down hill fast; if he is kept occupied in such things as will give the other muscles a chance to hypertrophy and act as a compensation for the diseased muscles, the patient will get along surprisingly well. The prognosis is better in proportion as the disease begins late in life; the juvenile type presents the best prognosis of all the dystrophies, although he had seen cases of pseudohypertrophy which remained stationary for a long time. In such cases there should be systematic exercise, prescribed by a physician; the physician should direct just how much and what kind of exercise should be given and all the details should be regulated with the view to get the maximum amount of nutrition to the muscles with the minimum of injury to the diseased muscles by over-exertion; in this way a great deal can be done for such cases.

DR. JOHN GREEN, JR., read a paper (see page 428, this issue,) on a case of

Corneal Ectasia.

DISCUSSION.

DR. M. WIENER said the case was exceedingly interesting. He had never seen one just like it; the marginal inflammation, as explained by Dr. Green, had probably caused the stiffening, and the resulting contraction of the periphery of the cornea.

DR. W. E. FISCHER said he had never seen a case of this kind and was very glad to have an opportunity of examining it. It reminded him of peripheral corneal atrophy, though it certainly did not belong to that class, as the cornea remains clear; the literature is very scant on the subject.

DR. J. H. CROSS said the case looked to be, at first sight, a case of keratoconus or keratoglobus, where the cornea is enlarged, but a more careful examination showed it was not of this character.

DR. GREEN said he would like to have the opinion of the gentlemen in regard to the advisability of operating on the pterygium of the right eye. As the latter is the one that will give the patient the greatest service, the question of removal of the growth before it seriously encroached on the pupillary area must be considered. The speaker believed that the inflammatory process had come to a standstill, and that in all probability the pterygium had reached the limit of invasion.

DR. WEINER thought operative interference would produce more

scar tissue and, hence, a contraction, and as the contraction is in the upper part of the cornea, and inner and lower portion of the lens, he thought it would be just as well to let it alone. He feared that an operation with its resulting scar tissue might choke off some nourishment from the clear cornea.

DR. FISCHER agreed with Dr. Wiener. As the pterygium is very thin and doesn't seem to advance, he thought it best to leave the case as it is; aside from the question of nourishment, there would certainly be scar tissue and he believed this would rather aggravate the trouble.

DR. CROSS was also of the opinion that it would be better to let it alone. He did not think it wise to use operative interference on a cornea in the condition seen here tonight.

DR. GREEN said the case, at first sight, seemed to be a rather anomalous case of keratoconus but careful inspection at once disproved this. The case was seen in consultation by Dr. A. E. Ewing, who suggested stimulating applications of tincture iodine. This treatment had been faithfully pursued for about six weeks and had resulted in the formation of a certain amount of new tissue, as shown by a partial filling up of the peripheral excavation.

THE BETHESDA PEDIATRIC SOCIETY.

*Meeting of November 21, 1901; Dr. John Zahorsky,
President, in the Chair.*

DR. W. S. BARKER reported several cases of
Tetanus in Infants and Children.

CASE 1.—The patient, C. K., was a boy 12 years of age. While playing in an icehouse he fell from a height into a pile of sawdust and severely lacerated his wrist; sawdust and splinters were ground into the wound. Nothing was done for several days by the parents. When first seen, about the fifth day, the wound looked angry and inflamed. Contraction of certain facial muscles marked the onset of tetanus. The wound was opened and corrosive sublimate dressing applied. On the following day unmistakable signs of tetanus were present. He had a severe convulsive attack at the end of the second day. He fell out of bed. Marked rigidity of muscles of back, neck

and limbs were present. The convulsive attacks were repeated several times during the next day. The patient was treated with the ordinary antispasmodics, and for three days was given daily injections of 10 cc. of tetanus antitoxin.

Improvement was noticed on the third day of treatment, and rapid recovery followed. This was a case of the severe type, with short incubation period and rapid onset of serious symptoms. Recovery of such cases is, I believe, rare.

CASE 2 —J. K., 8 years of age, shot himself in the hand with a toy pistol on the Fourth of July, 1900. Symptoms of tetanus developed on the fifth day, but the parents did not apply for treatment for four or five days afterward. The disease had advanced so far that scarcely anything could be expected from treatment. The usual antispasmodics (chloral, bromides and chloroform) were used. Several minims of carbolic acid were given hypodermatically. One injection of antitetanic serum was administered, but with fatal outcome.

In an almost identical injury on July 4, 1901, I administered antitetanic serum as a preventative, and no tetanus developed; which, although hardly an argument, indicates the proper course. Where such wounds come to us, as suggest the possibility of resulting tetanus, thorough cleansing and drainage should be obtained, and immunizing doses of antitetanic serum given.

CASE 3.—The next case was in an infant; the first signs developing eight days after birth. The infant was delivered by a midwife; but, contrary to the usual treatment, no ointment was applied to the stump. Marked symptoms of tetanus had developed by the tenth day. The navel had an infected appearance. The infant could not nurse, and some mild convulsive seizures occurred. At this time ten units of antitetanic serum were injected. The infant gradually recovered. This case was of the mild type of tetanus neonatorum. In conclusion, we must take the ground that tetanus antitoxin is most valuable as a prophylactic, that but few severe cases of developed tetanus will recover under its use.

DR FISCH.—The pathology of tetanus is still somewhat obscure; it must be studied less as an infection, than an intoxication. The tetanus toxin is produced by the tetanus bacillus, at the site of the infection; for the growth of the infecting bacilli, a symbiotic relation with other bacteria, seems to be profitable. The tetanus toxin is physically and chemically an unsolved riddle; its most apparent

qualities is intense toxicity. The toxic dose for human beings is not known, but one ten-millionth of a 10 per cent solution of the precipitated substance is fatal to a mouse of fifteen grams. From the clinical symptoms and bacteriologic findings, we make the presumption that the toxin acts on the motor cells of the anterior cornua of the spinal cord and medulla. Microscopic changes are found after death in these cells, and in these alone.

Certain differences are found in the symptoms in different animals. The first symptom in a guinea-pig, a dog, etc., is a local contraction on the side of the injection. This has led to the theory that the toxin travels along the sheaths of nerves, besides circulating in the blood. In human beings no such local phenomenon is observed; here the first symptom invariably is trismus.

There is a misconception in regard to the efficacy of tetanus antitoxin, which should be corrected. The antitoxin can only neutralize the free toxin, but can not displace that which has already attacked the nervous system. The bacterial toxins are characterized by having affinities for certain cells of the body. According to the side-chain theory of Ehrlich, the antitoxins are groups of molecules which have been detached from the cells, under the stimulus of the toxin.

The tetanus toxin has this affinity for the ganglion cells, also a slight affinity for the ovarian tissues. The union of the toxin and the cell group is so intimate that it can not be separated, except slowly, by a loss of the cell-group. Its external expressions are the clinical tetanic symptoms.

In early stages of the disease, the serum may do good; later, it can do no good, besides neutralizing the toxin not yet combined, and circulating in the blood and lymph.

There may be an excess of antitoxin in the blood, and yet the patient may succumb. This was demonstrated in one of the recent cases of tetanus, due to antidiphtheritic serum. A child suffering from typical tetanus, had received the tetanus antitoxin. A lumbar puncture was done, and some cerebro spinal fluid withdrawn. This fluid, when mixed with a fatal dose of toxin, and injected into a mouse, prevented the death of the mouse, but the child died.

In the recent epidemic, it was found that 10 cc. of the diphtheria antitoxin contained about the fatal dose of tetanus toxin. From this, the relative susceptibility of the human being in comparison with animals could be calculated, it is about half that of a horse. The

period of incubation for the toxin varies, according to its quality, from one to seven days; in the recent cases in children, it was between five and ten days. In an infection the first symptoms never appear before the fourth day. Cases in which a longer period of incubation has been reported, must be considered with suspicion; clinical cases do not allow to fix the date of infection, or rather, of the beginning of the growth of the tetanus bacillus. This applies to men as well as to animals.

DR. MARTIN.—I have seen several cases in the recent epidemic, two of which had recovered under serum treatment. Our evidence in regard to the prophylactic value of antitoxins, is mainly speculative. Some years ago a case of tetanus neonatorum under my care recovered under the administration of antispasmodics. He believed that cold and dampness played a very important part in the etiology.

DR. HINCHEY.—Since Baccelli's method of injecting carbolic acid has reaped such good results, it seems that a combination of this treatment and the antitoxin treatment, is worthy of trial.

DR. CHAPMAN.—I refer to a certain region of France, where tetanus so frequently followed any wound. A law was passed, compelling the use of the antitetanic serum in all wounds. Since this practice the deaths from tetanus have diminished 95 per cent. I regard this as conclusive evidence of the value of the serum as a preventative.

DR. LIPPE.—During the recent outbreak I had injected a child with the City serum; but, on hearing of the fatal result the following day, I used the tetanic antitoxin at once. Ten cc. were injected daily for several days. No tetanic symptoms developed.

DR. BLAIR.—For several years I have been interested in flushing the blood, so to speak, in the acute septic infections. Very large quantities of a normal saline solution are injected intravenously. The perspiration and diuresis following is very copious. I have used this method in a case of tetanus, and believe that it has a marked effect on the muscular contractions. Still the patient died, presumably due to exhaustion.

DR. HARRIS.—In reference to the muscular contractions, referred to by Dr. Fisch, I reported that I have seen three cases in children in the last epidemic, due to the diphtheria antitoxin, in which a marked flexion of the body toward the side in which the serum was injected, existed. Other symptoms of tetanus were well marked (trismus, risus, etc.).

REPORTS ON PROGRESS

MEDICINE.

In Charge of W. M. HOGE, M.D.

A Study of Temperature, Pulse and Respiration in the Diagnosis and Prognosis of Diseases of the Brain.

J. I. Eskridge (*New York Medical Journal*, September 28, 1901) closes a valuable contribution on the above subject, with the following conclusions:

1. By a careful study of the pulse, respiration and temperature, much valuable information, that will aid us in diagnosis and prognosis, may be obtained.
2. A change in the character of the respiration, rather than in its frequency, is sometimes one of the first positive indications of organic intracranial disease, especially of tubercular meningitis.
3. A respiration that is more frequent while the patient is asleep or unconscious than awake or conscious, is very strong evidence of organic disease, so situated as to interfere with the respiratory centers.
4. Apoplexy, due to hemorrhage, is attended with greater disturbance of the temperature, soon after the stroke, than where it is due to embolus or thrombus. In the former case the disturbance consists in a slight fall of the axillary temperature, within an hour or less, after the occurrence of the hemorrhage, the fall being a little greater on the paralyzed side. After reaction has occurred (8 to 12 hours), a slight rise in temperature, a little greater on the paralyzed side, and of from one half to two or three degrees above normal. The temperature remaining a little higher on the paralyzed than on the opposite side for a week or more. Later, the temperature is a little lower on the paralyzed side if atrophic disturbances occur.
5. In thrombosis or embolism there is no disturbance of temperature before the end of the second day, except in severe cases, and in these it is slight. So that any marked disturbance of temperature on the first day indicates hemorrhage.
6. Considerable disturbance of temperature, beginning from the

second to the fourth day is significant of thrombosis or embolism, and indicates extensive softening and an unfavorable prognosis.

7. If the temperature on the paralyzed side remains higher than on the opposite side for several weeks after the occurrence of apoplexy from any cause, it indicates that softening or inflammation of the brain is going on, and lends great gravity to the prognosis.

8. It is premature to attempt to arrive at any definite conclusions from a study of temperature, pulse, and respiration in traumatism of the brain. However, he feels justified in making the following tentative statements:

a. All cases of injury to the head, in which the temperature does not reach normal or slightly above a few hours after the injury, will probably prove rapidly fatal.

The higher the temperature, the greater the probability is that contusion or laceration of the brain and membranes is a greater factor than intracranial hemorrhage. The greater the variation from normal, either above or below, the worse the prognosis.

b. A rapid, weak, or irregular pulse denotes great danger. A pulse that is at first slow, but soon after becomes quite rapid, indicates that the brain is being overwhelmed by the intracranial lesion, and justifies a bad prognosis.

c. An exceedingly slow (8 to 10 per minute) respiration indicates a lesion at the base, in the posterior fossa. The slower and the more pronounced the intermission in the respiration, the greater is the danger of sudden death. A respiration at first nearly normal in frequency, but soon after becoming quite rapid, indicates a rapidly fatal case.

PEDIATRICS.

In Charge of M. J. LIPPE, M.D.

Widal Reaction in Children.

Thursfield (*Pediatrics*, October 15, 1901) reports the results of his investigation on the value of the Widal reaction in children: In a study of 100 different cases, 42 gave a positive reaction; the remainder were negative, including almost every febrile disease to which children are liable. The method used was the following: The broth culture of the typhoid bacillus should be not more than twenty-four hours old, made from a stock culture of the bacillus, which is renewed from time to time

from a trustworthy source. Taking a small quantity of the patient's blood in a sterile glass pipette, and diluting it with an equal quantity of sterile broth, he runs it through a centrifuge, and separates the blood-corpuscles; then, to a platinum loopful of the diluted serum, he adds fifteen loopfuls of the broth culture of the typhoid bacillus on a cover-slip; this obtains a dilution of one to thirty. Sealing the cover-slip on the sides with paraffin, to prevent evaporation, he examines, at intervals, during one hour; no clumping occurring within this time; the reaction is regarded as negative; he makes control experiment, whenever possible, with the blood of a known typhoid patient.

His conclusions are: (1) That in children a positive Widal reaction is trustworthy evidence of the presence of typhoid fever; (2) that a negative reaction, later than the tenth day of the illness, is strong but not absolutely convincing evidence of the absence of typhoid; (3) that repeated negative reactions are trustworthy evidence that the case is not typhoid at all.

Acute Septic Myocarditis.

Von Zuppinger (*Wiener Klinische Wochenschrift*) reports three fatal cases of this affection, occurring in children having a superficial, apparently trivial pus infection; one, an infection of the foot; another, a small ulcer of the groin; the third, an abscess of the cervical lymph nodes. There were no symptoms of sepsis, only those of cardiac failure and nephritis. Post-mortem examination in two of these cases revealed marked changes in the heart muscle and kidneys. He quotes Prof. Krehl, in saying that the streptococci and staphylococcus may, through their toxins affect the heart primarily, in a manner similar to the toxins of the diphtheria bacillus.

Primary Adenoitis in Children.

Ausset and Dorian (*Medical Review of Reviews; Archiv des Malides des Enfants*, August, 1901) report a series of nineteen cases of this affection. The onset may be sudden, ushered in by high temperature, coryza, cough, mouth breathing and adenoid voice. In their study they exclude adenoitis in a child having adenoids. Usually there is nothing in the chest to account for the cough, the contact of mucus which forms in the nasopharynx, being, in their opinion, causative. Otolgia was present in one-half of the cases, otitis being rare.

The infection is repeatedly transmitted to the cervical lymph

glands, which may swell to a great size, so that suppuration seems inevitable. Posterior rhinoscopy is impossible in most cases, according to their experience, and they do not understand the claims of others in the field. On inspection from the mouth, the pharynx is seen red, and covered with mucus.

The authors think it possible that "glandular fever," so-called, is nothing more than acute adenitis.

Acute primary adenitis is a benign affection, terminating in three or four days, although it may persist longer.

In the way of treatment, they recommend irrigating the mouth with a two and one-half per cent Labarraque's solution, while the nasal cavities are medicated with resorcinized or methylized vaseline.

Maternal Impressions.

Rachford (*Archives of Pediatrics*, October, 1901) reports an interesting case; the mother of the child had repeated attacks of catarrhal appendicitis during the last fourteen years, one attack occurring 36 hours before the birth of her first child, in June, 1898. In February, 1899, being two and one half months pregnant, she had a typical attack, and was operated on successfully, but vomited 48 hours afterward, which was attributed to the anesthetic. Everything progressed favorably until the tenth day, when a stitch abscess developed at the top of the wound, and sepsis, with subsequent scarring, affected all of the stitch wounds, although the stitches were removed on the seventh day.

In September, a girl baby was born, which was normal and well developed.

When one year old, the mother noticed a mark resembling a stitch scar over the region of the child's appendix. During the next six months, three more scars appeared, in the same region as the scars produced by the operation in the mother, there being, however, no mark corresponding to the line of incision. The markings, although distinct, are not made up of scar tissue, but are depressions in the skin. He believes the maternal impressions which produced the markings on the child, resulted from the strain on the stitches of the mother's wound, during the vomiting, following the anesthetic. He calls attention to the fact that these markings appeared one year after birth, and the maternal impressions being made during the latter part of the third month of gestation.

BOOK REVIEWS.

A Treatise on the Acute, Infectious Exanthemata. Including Variola, Rubeola, Scarlatina, Rubella, Varicella and Vaccinia, with especial reference to Diagnosis and Treatment. By William Thomas Corlett, M D., L.R.C.P. Lond., professor of dermatology and syphilology in Western Reserve University; consulting dermatologist to Charity Hospital, St. Alexis Hospital, and the City Hospital, Cleveland; member of the American Dermatological Association, and the Dermatological Society of Great Britain and Ireland. Illustrated by twelve colored plates, twenty-eight half-tone plates (from life), and two engravings. Pages, viii-392. Size: six and one-fourth by nine and one fourth inches. Sold only by subscription. Price: Extra cloth, \$4 net, delivered. Philadelphia: F. A. Davis Company, 1914-16 Cherry street.

This is a splendid work. The article on variola is very complete, and illustrated by twenty beautiful plates. Vaccination is advocated as a preventative in no uncertain terms. The systematic treatment is recommended. Scarlet fever is held to be contagious from the beginning of symptoms to the end of desquamation. The organisms described by Class and Babinsky are probably the same, and may be the true etiological element. Nothing new is given under treatment, but the differential diagnosis is made perfectly clear.

Measles is considered usually a trivial disease, but the complications given should remove this misconception. Diseases of the eye, ears, larynx, and lung are the most common. But disorders of the digestive tract, nervous system, and skin add to a formidable series of dangerous lesions. We are glad to see that it is recommended that the room be kept light in the treatment of measles. Too little stress is laid on the avoidance of complications, by forbidding any adult who has any respiratory disease from entering the room. An addendum contains a table of differential diagnosis and formulary for the disinfection of the rooms.

The plates are very fine, and some of them portray a very true picture in life. Altogether, this is a very satisfactory work on the subject, containing the latest ideas in pathology and diagnosis, and

treated in a practical manner. It will be very valuable to the general practitioner.

A Text-Book of Medicine for Students and Practitioners. By

Dr. Adolf Strümpell, professor and director of the medical clinic at the University of Erlangen. Third American edition; translated by permission from the thirteenth German edition, by H. F. Vickery, A.B., M.D., instructor in clinical medicine, Harvard University, and P. C. Knapp, A.M., M.D., ex president of the American Neurological Association; with editorial notes by Frederick C. Shattuck, A.M., M.D., Jackson professor of clinical medicine. With one hundred and eighty-five illustrations in the text, and one plate. 1901. New York: D. Appleton & Company.

Strümpell's text-book is, as generally acknowledged, an authoritative treatise on practical medicine. It has passed through thirteen editions in the German language. It has been translated into French, English, Italian, Spanish, Russian, Modern Greek, Turkish and Japanese, and some of these translations have had several editions. The author has made an honest effort to bring this edition up to the level of contemporary medical thought and knowledge. The translators have added a chapter upon the plague and various notes, which they hope may prove of assistance to the American practitioner.

We find the latest medical belief in regard to the origin of malaria expressed. But it is held that yellow fever can be transmitted by fomites. Rheumatism is distinctly recognized as an infectious disease. Antitoxin is recommended in diphtheria, but the suggested dose is rather small. Micro organisms are given first place in the etiology of diseases of the air-passages; but to cold is also assigned a distinct power. The chapter on pneumonia is particularly valuable. The diseases of the nervous system are extensively discussed.

The translator's style is elegant, and characterized by clearness. The practitioner will find this a very useful and satisfactory guide in his practice. In the treatment of diseases, the author is very conservative, and his directions can be safely followed.

Physicians' Visiting List for 1902. Philadelphia: P. Blakiston Son & Co.

This well known pocket visiting account book is, as usual, bound in black leather, and can conveniently be carried in the coat pocket. It is now in its fifty-first year of publication. It is made in various sizes, to suit the extent of the physician's practice.

System of Physiologic Therapeutics. A practical Exposition of the Methods, Other than Drug-Giving, Useful in the Prevention of Disease, and in the Treatment of the Sick. Edited by Solomon Solis Cohen, A.M., M.D., professor of medicine and therapeutics in the Philadelphia Polyclinic; lecturer on clinical medicine at Jefferson Medical College; physician to the Philadelphia Hospital. Vol. III—Climatology, health resorts, mineral springs. By F. Parkes Weber, M.A., M.D., F.R.C.P. (London), physician to the German Hospital, Dalston; assistant physician North London Hospital for Consumption, etc. With the collaboration for America of Guy Hinsdale, A.M., M.D., secretary of the American Climatological Association. In two books. Book I—Principles of climatotherapy, ocean voyages, Mediterranean, European and British health resorts. Book II—Mineral springs, therapeutics, etc. Illustrated with maps. Price for the complete set, \$22 net.

These are the third and fourth volumes of Cohen's system of physiologic therapeutics, whose timeliness has already been commented upon. The first part treats of the factors of climate, with their effect on physiologic functions and pathological conditions, and describes the fundamental principles that underlie the application of climates, health resorts, and mineral springs in the prevention of disease, and to promote the comfort and recovery of the sick.

The second part describes health resorts; and the third part discusses in detail the special climatic treatment of various diseases and different classes of patients. Book II also describes the health resorts of Africa, Asia, Australia and America.

In Book I, ocean voyages are first treated of with considerable detail, and their advantages and disadvantages, indications and counter-indications as a therapeutic measure, are pointed out. As very little exact information on this important subject exists in an available form, this chapter should be of great use to physicians. The subject of altitude is treated in a similarly full and definite manner, and not only are we told what classes of patients and disorders are benefitted by Alpine and Rocky Mountain climates, but also what classes are unsuitable for such treatment. The difference between summer and winter climates in Switzerland, and the therapeutic indications for the different seasons are discussed at length. In addition, the sea-coast inland health resorts of the Mediterranean countries; those of Continental Europe and those of the British Islands, including mountain

stations elevations, plains, and mineral water spas, are described, with no waste of words, but with a fullness of detail unusual in medical books. Not only geographic and climatic features are pointed out, but also social and other characteristics so important in selecting a resort that shall be suitable to the tastes and means of the individual patient, as well as beneficial in this disease. Throughout this section allusion is made to the special medical uses of the various resorts described, and to the particular form of treatment for which any one is famous.

The existence of sanitariums for special diseases; as those at seaside resorts for scrofulous and weakly children; and in various regions for consumption, nervous affections diseases of women, and the like, are specified; and the mere lists of such places, as found in the index, are likely to prove invaluable for reference. We know none other so complete. A mere glance at the closely-printed pages of the index will show how unusually full is the treatment of special resorts and their particular qualities. Like the preceding volumes, these are thoroughly scientific and eminently practical, a combination that reflects credit alike on authors and editor.

Physicians' Pocket Account-Book. By J. J. Taylor, M D. Published by the Medical Council, Philadelphia, Pa.

An excellent account-book. No posting into a ledger is required. The book is adopted for the breast pocket of the coat. It is encased in a nice leather envelope. The physician will find this a very satisfactory book in which to keep his daily record of services.

Cancer not Hereditary.—Heredity as a factor in disease is receiving almost daily another push into the abyss of old theories. The German National Committee, after a study of the subject, have concluded that cancer is almost never hereditary. This will be very good news to individuals who have ancestors that died of this terrible malady.

NOTES AND ITEMS.

The Mental State of Czolgosz.—Spitzka, of New York, has discussed this subject, and concludes that no indications of mental disease can be perceived in the assassin. Absurdity of statements and acts can not be taken as a criterion of insanity; the act was due to the misplaced enthusiasm of youth, and the still more mistaken hero worship of the chieftains of the anarchists. Incidentally, he remarks that crime is a variable entity and until it has been proven that criminals form a distinct class of individuals, there is no reason for criminal anthropology. The illustration of the craniology of murderers, as such, is about the crudest sort of proposition made by scientists.

Decreasing Death-Rate.—The mortality statistics for 1900 which have recently been made public, corroborate the general impression that sanitary science has succeeded in reducing the general death-rate. The decrease in the last decade is about 10 per cent, or 1.8 per 1000 inhabitants; the average age of death in 1890 was 31.1 years, while in 1900 it was 35.2 years.

History of the Clinical Thermometer.—Currie, of Edinburgh, (*Journ. A. M. A.*) employed a thermometer in the treatment of typhoid fever patients with the cold douche as early as 1797. He was ridiculed by his German contemporaries as an instance of medical decay in English medicine. The first clinical application of the thermometer was made by Sanctorius, of Padua; he invented a thermometer open at the end; after being held by the patient it was plunged into cold water. Boerhave taught the importance of the thermometer. De Haen—1704 to 1776—must be given the the honor of introducing the thermometer into current use at the bedside. It was not until 1850 to 1870 that it came into general use mostly through the studies of Traube and Wunderlich on temperature in disease.

Death of Dr. Gihon.—Dr. Albert L. Gihon died in New York City, on Sunday, November 11th, as a result of cerebral hemorrhage, at the age of 70 years. He was senior medical director of the United States Navy, but retired from active service in 1895, with the rank of

Commodore; he entered the navy in 1855, and served forty years; he was a member of numerous American and foreign medical and sanitary societies, and contributed numerous monographs on hygiene and sanitary science to medical literature.

Scientific Laboratory.—Dr. L. H. Warner announces that he has opened a chemical, pathological and bacteriological laboratory, known as the Warner-Corthell Scientific Laboratory, at 20 W. 34th street, New York.

The Transportation of Tuberculous Passengers.—The matter of providing separate coaches or sleepers for consumptives was recently discussed by the Western Passenger Association. Many protests have been received against the custom of permitting consumptives in the same coaches with healthy persons. Trains going to Colorado, New Mexico, and Arizona are the principal carriers of such sick. No restrictions have hitherto been made by the railroads, and consumptives have been allowed the same privileges as healthy persons.

Many tourists refuse to travel on these trains, preferring to go to other than Southwestern resorts.

While the evil will be generally recognized, a remedy has not been offered. Plans for isolation might be easily outlined, but great difficulty arises when an attempt is made to determine who is suffering from consumption. The agent selling the ticket might be suspicious of certain individuals but nothing but a medical examination could definitely establish the fact; to subject all suspicious individuals to a medical examination is out of the question, and many really tuberculous appear perfectly well.

Functional Derangement of Thyroid Gland.—Dr. Perry at a recent meeting of the Harvard Medical Society (New York), described a certain clinical picture, which he believed to be dependent on a functional disturbance of the thyroid gland. Five symptoms were usually present; the most noticeable was pain in the joints; the others were a rapid feeble heart, a tendency to headache in women, menorrhagia and the usual development of the symptom-complex after a shock or fright. The cases are usually treated for rheumatism. The symptoms gradually disappear on the administration of thyroid gland.

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